

Regional Cooperation for Sustainable Oak Woodland Landscapes:

*A Study of the Central Coast and the
Northern Sacramento Valley
Sustainable Landscapes Projects*

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May 1998

California Department of Forestry and Fire Protection,
Fire and Resources Assessment Program

Contract #6CA51240

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Table of Acronyms and Abbreviations

AMBAG	Association of Monterey Bay Area Governments
ADR	Alternative Dispute Resolution
CalEPA	California Environmental Protection Agency
CC	Central Coast
CCRDC	Central Coast Resource & Development Council
CDF	California Department of Forestry and Fire Protection
CRMP	Coordinated Resource Management and Planning
FRAP	Fire and Resources Assessment Program (unit of CDF)
GIS	Geographic Information System
IHRMP	Integrated Hardwood Range Management Program
NGO	Non-Governmental Organization
NSV	Northern Sacramento Valley
RC&D	Resource Conservation and Development District
SLP	Sustainable Landscapes Project
TAC	Technical Advisory Committee
UCD	University of California, Davis
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service

Executive Summary

Goals and Background

This report documents and analyzes a project initiated by the California Department of Forestry and Fire Protection (CDF) to foster sustainable conservation and management of California's oak woodlands at the bioregional or ecosystem scale in two areas of California: the central coast and the northern Sacramento Valley. The purpose of the Sustainable Landscape Projects (SLPs) was to encourage local stakeholders to develop regionally appropriate criteria for sustainable management of oak woodland landscapes in response to the California Board of Forestry's policy that counties take steps to develop their own protection measures.

The projects can also be seen as political and social experiments in meeting regional planning and management needs and constraints in an era of increasing decentralization and localization of decision-making. The report examines how collaborative processes contribute to the success of these efforts by building informal networks of knowledge and regional technical and policy-making capacity.

Chapter one sets the context for the Sustainable Landscapes Projects by identifying four trends that help locate them among other sociopolitical, institutional and procedural innovations in land and resource management:

1. the “ecological-institutional gap” between the causes of land use problems and their solutions;
2. the growing public expectation that education and incentives should precede regulation;
3. the socio-demographic pressures that increase development, fragmenting the landscape, and emphasize amenity values over traditional commodity uses and management; and
4. the growth of “subregional networks” and informal institutional capacities, many of which are organized to integrate planning and management to address natural resource, social well-being, and economic development issues.

These help frame our understanding of how regional networks operate to reframe or enhance governance itself.

Objectives, Methods, and Outcomes of the Central Coast and Northern Sacramento Projects

Chapters two and three describe the main events of each SLP. The Central Coast involved 85 participants and lasted for four years. It was intended to explore and quantify the concept of a *sustainable* oak woodland landscape by

1. developing analytical tools;
2. helping policy makers use those tools for decision-making; and
3. increasing local awareness of oak woodland conditions.

The Central Coast SLP (CC SLP) produced: 1) A final report describing proposed measures and criteria of sustainable oak woodlands; 2) a "walkabout" that was to test both the proposed measures in the field as well as a methodology for documenting the group's processes; 3) a Central Coast RC&D regional plan, produced as a continuation of the CC SLP work; and 4) increased technical, educational and communicative capacities in regional institutions. While the group wished to continue these efforts, insufficient technical leadership emerged to sustain them as a project. The Central Coast RC&D incorporated many threads of the Sustainable Landscapes Project into its area plan and its work with the Association of Monterey Bay Governments (AMBAG) on a regional information system. Several SLP project members have participated in the coordinated planning for the Pajaro River Watershed.

Chapter two concludes that the Central Coast SLP was an ambitious experiment that worked better than originally envisioned in some ways, but frustrated both agency representatives and participants in others. Participation remained high, but volunteer participants could not resolve what turned out to be complex issues as quickly as, or in the way that, CDF had envisioned. Advisory and technical committees were eventually combined so they could exchange perspectives about technical difficulties of dealing with sustainability, as well as the importance of creating "simple tools" in spite of risk and uncertainty. GIS support did not assist the process as envisioned. Moreover, CDF participants did not clearly articulate the desired outputs or products to the participants' satisfaction, nor its internal political needs and expectations, thereby creating an ongoing sense of distrust between participants and the agency. However, the Central Coast SLP proved to be an important experiment and has left a positive legacy in the region in spite of its incomplete work, and provided insights that could be utilized in the Northern Sacramento Valley.

Chapter three describes the Northern Sacramento Valley SLP (NSV SLP), and analyzes the modified approach used by CDF as a result of what was

learned on the Central Coast. The most notable change was the use of a preassessment. This process clarified several key factors:

1. fewer human resources were available than on the Central Coast;
2. there was more institutional capacity for GIS use;
3. landowners were mostly satisfied with local policies, were less interested in planning, and more concerned about government intervention.

The preassessment also led to a decision that the development of regional information capacity in the NSV would be a satisfactory outcome which would provide participants, when ready and willing, better tools to examine and define a sustainable oak woodland landscape. Common Ground also worked with CDF to redefine its role from that of sponsor to one of convener and participant.

The NSV SLP also engaged local stakeholders in two sessions to further frame issues. They determined that few people perceived short-term threats to the hardwood landscapes of the Northern Sacramento Valley. However, many thought that impacts of population growth and development would likely create a long-term threat to the hardwoods. Thus the group set goals for developing informational tools, initiating an educational outreach system, encouraging broad community involvement and, finally, composing a description of sustainable oak woodland landscapes. The final products included maps of growth projections and potential buildout patterns, overlaid with hardwood maps, to quantify potential development impacts. Additional ecological information was later added to the GIS project.

Lessons Learned

Chapter four describes the results of post-project interviews and identifies lessons learned from project efforts to foster technical knowledge and tool building that can support the development of regional conservation policies and behavior. Lessons for sponsoring agencies include that they be very clear up front about desired products and outcomes, measures of success, the investment needed to achieve them, and about their nexus with current or anticipated policy actions. Sponsoring agencies need to decide whether to behave as stakeholders, and should clarify whether or not they are willing to concede power or exercise flexibility with their mandates and authorities. Sponsoring public agencies must remain as visible and accessible as other participants, and should be present and available throughout the process.

With respect to the role of policy and regulation, the report suggests the need for early discussion of the relationships between the collaborative

process, formal governing institutions and policy-making processes; developing realistic expectations of the policy outcomes of the group's work, and periodic reviews of those linkages and updates on policy changes.

In order for local groups to “own the problem” and agree to seek collaborative solutions, the report suggests conducting a preassessment to clarify the understanding, feasibility and expected time frame of project goals and to evaluate factors that could affect the group's work. This effort should map political, social and cultural factors; analyze the gaps between jurisdictions and the resource problem; and evaluate the role other institutions play in dealing with the problem.

The report concludes by describing the SLPs' investments in educating individuals, fostering deliberative processes, encouraging “networks of reciprocity and exchange” among stakeholders, and providing technical and fiscal resources to local institutions. In these efforts, the SLP sought to establish a more appropriate balance among governing institutions and elements of civil society by focusing on the human, social, and institutional capital within each region, rather than exclusively on institutional or regulatory outcomes.

The report presents a four-stage model, based in part on the experiences of the SLPs, that is applicable to other large-scale planning and management efforts. This model differs from other models of interagency or inter-sectoral collaboration by looking at ways groups or partnerships can be engaged to develop analytical tools collaboratively that in turn support efforts to create regionally appropriate policies.

Chapter 1: Regionalized Planning in an Era of Localized Governance

Background

This report documents and analyzes two projects initiated by the California Department of Forestry and Fire Protection (CDF) to foster sustainable conservation and management of California's oak woodlands at the bioregional or ecosystem scale. These two Sustainable Landscapes Projects (we shall refer to them as "SLPs" throughout this report) were begun separately in 1992 and 1994. The first was implemented on the Central Coast (ranging from approximately Santa Cruz to San Luis Obispo),¹ beginning with an initial meeting of stakeholders in October 1992. The second SLP, which focused on five counties in the Northern Sacramento Valley,² began its first stakeholder "framing" meetings in November 1994, and finished its first phase within the past year.

The overall purpose of the SLPs was to encourage a diverse group of local stakeholders to develop regionally appropriate criteria for sustainable management of oak woodland landscapes. In 1985, the California Board of Forestry (the official body that oversees CDF's activities and sets policy for fire management and timber harvest review) expressed a preference that counties take steps to develop their own protection measures.

The SLPs were developed by CDF's strategic planning unit, the Fire and Resources Assessment Program (FRAP).³ FRAP's strategy for the SLPs had several implicit and explicit goals, which we shall try to tease apart in this report. Among other considerations, the SLPs may be seen as political and social experiments that we can interpret within the larger context of the regionalization of planning and management in today's era of increasing decentralization and localization of resource management decision-making.⁴

While the two projects have many similarities, they must be understood and analyzed separately. Our primary approach to this study was to review the literature and historical documents of the SLPs and interview several of the key players. After we reviewed the reports and meeting minutes of the

¹ The five counties in the Central Coast project area were Santa Cruz, Santa Clara, Monterey, San Benito and San Luis Obispo.

² The five counties in the Northern Sacramento Valley project area were Shasta, Tehama, Butte, Colusa and Glenn.

³ At the time the SLPs were initiated, the program was the Forest and Rangeland Resources Assessment Program (FRRAP). After a brief stint as the Strategic Planning Program (SPP), the name was again changed to the Fire and Resources Assessment Program (FRAP). We will refer throughout this document to the program's present acronym, FRAP.

⁴ While the SLPs may be seen as one example of this trend, it is interesting to note the contentiousness that has surrounded various counties' attempts to develop and adopt timber harvest rules under the state Forest Practices Act.

Central Coast project, it became clear that CDF initiated the Northern Sacramento Valley effort only after substantial reflection on the lessons of the earlier CC project. Some of those lessons are explored in chapters three and four. It is also important to note the significant differences in the economic, political and social contexts of each project, described in detail in chapters two and three.

We assume in this analysis that the SLPs were *not* intended to be an alternative pathway to policy development. The projects cannot be seen through the lenses of more traditional "negotiated rulemaking,"⁵ Alternative Dispute Resolution (ADR) or conflict resolution strategies. These alternatives usually imply a binding policy outcome that is then adopted through formal rulemaking and policy-making institutional channels. In the case of the SLPs, while differing perspectives may have clouded the evolution of the projects, no party made any explicit commitment to policy outcomes.

We write this report with a broad audience in mind. Our narrower purpose is to analyze and reflect on the course of the projects in order to assist CDF's Forest and Resource Assessment Program in its responsibilities to assess natural resource management trends. However, we believe the projects also represent a new approach to capacity building and to fostering better communication and information usage among stakeholders. Understanding the SLPs may help planners, local land use stakeholders, public agency managers and program executives to see natural resources management solutions in a new light. We cannot overemphasize that such projects stretch the boundaries and missions of public agencies. How much a public agency can justify making indirect investments, building political and social capital, and engaging an increasingly informed citizenry in its policy making processes will likely remain an important and contentious question.

Context

For over two decades, Californians have attempted to protect and preserve individual "heritage" oak trees and relic patches of oak woodland. Thirty seven of California's 58 counties have adopted some kind of oak protection or conservation strategy; that is, most of the counties with significant occurrences of oak woodland have made some attempt to address the issue (Doak et al. 1988). In addition, many municipalities have developed restrictions on oak tree removal, mostly focusing on "street trees," or trees on residential lots, as opposed to native stands of oak woodland (Bernhardt and

⁵ Negotiated rulemaking refers to development of policies and procedures through negotiation with stakeholders. It is a term often used by the US EPA in its alternative approaches to development of new regulations.

Swiecki 1989& 1991: 2-3; Giusti and Tinnin 1993).⁶ But the existing institutions with authority to conserve, manage and protect oak woodlands do not have the authority to address impacts on the larger ecological and political landscapes within which oak woodlands occur (Mayer et al. 1985; Doak et al. 1988; Tietje and Berlund 1995). Therefore, one of the largest challenges presented by the oak woodlands is to find a remedy for an “ecological-institutional gap,” that is, the gap between the threats to a resource and the institutional ability to protect against those threats.

California’s oak woodlands cover nearly 10 percent of the land area of the state and surround many of the regions experiencing intensive growth and development (Bolsinger 1988; Pacific Meridian Resources 1994). Since more than 300 wildlife species depend on oak woodlands for habitat, these areas represent a critical component in the conservation of California’s biological and genetic diversity (Standiford and Bartolome In press). Collectively, the state’s highly diverse oak woodlands form a resource that presents numerous conservation and protection challenges at multiple levels. First of all, four out of every five acres of California oak woodland are on private land (Greenwood, Marose, and Stenback 1993). Furthermore, since oak species are not considered legally “threatened” or “endangered,” they are unlikely to become the focus of the type of legal crisis that often characterizes the beginnings of political or institutional innovations in resource management. Oaks are not (yet) seen as a significant economic resource (Mayer et al. 1985; Standiford and Howitt 1989), so interest in their conservation as part of a commodity production cycle has not galvanized industry interests. On the other side of the equation, individual oak trees and stands of oak woodlands have increased in amenity value in many developing areas and have increasingly become a cultural icon for California (Alfano 1980; Polaris Research and Development 1987; Huntsinger and Standiford 1990).

In this chapter, we attempt to put the SLPs into a broader context for two reasons. First, future management strategies must be informed by an understanding of how scientific and local knowledge can be brought to bear on the management of oak woodlands in California. To this end, the Integrated Hardwood Range Management Program (IHRMP), initiated in 1986 by the State Board of Forestry, has already made significant contributions to our understanding of oak woodland ecology and management practices, publishing more than 130 scientific articles and reports (Integrated Hardwood Range Management Program 1992) and supporting publication of more than 120 additional journal articles and

⁶ Bernhardt & Swiecki (1989) estimate that more than 300 municipalities in California have what they call “street tree” or “tree protection” ordinances. They also cite a “lack of clear, specific goals [as a] common shortcoming of existing tree ordinances in California” (1991: 3).

conference papers.⁷ This analysis seeks to complement the broad range of IHRMP studies by focusing on the ways the SLPs attempted to integrate social and scientific knowledge, build regional capacity and foster institutional innovation. Secondly, while our analysis begins with the attempt to address sustainable practices in oak woodlands in California, our ultimate focus is on collaborative processes themselves. We want to understand what kinds of factors increase the success rates of regional planning and management integrated with localized decision-making processes. Since one of those factors is the building of informal networks of knowledge and regional capacity, the Sustainable Landscapes Projects provide open laboratories for observing these processes.

We begin by describing four broad trends that we believe set the stage for the SLPs and that help locate the SLPs among other sociopolitical, institutional and procedural innovations in land and resource management: the ecological-institutional gap; incentives and regulation; socio-demographic trends and land use; and the role of “social knowledge” in the development of subregional networks and alternative governance regimes. Although we identify these trends, we do not intend to assign causality to any of them in the formation of the SLPs. However, it is our belief that these trends did, in fact, influence the perceptions and expectations of key actors in the evolution of the SLPs.

Trend 1. The Ecological-Institutional Gap

Resource management institutions often find themselves ill equipped to meet the challenges of managing large-scale ecological processes. This increasingly important theme has been brought into focus through the growing discipline of conservation biology and the increasing use of geographic information systems (GIS). Land-use planning in California is concentrated for the most part at the county level. The California Environmental Quality Act (CEQA) is the single most powerful tool available to county planners to help them address impacts of development on natural resources. CEQA, however, has been inadequate to the task, since it is focused on the project level and does not address the linkages between projects or the overall impacts of development and land use conversion across a broad array of resources. County planners, therefore, end up

⁷ A full bibliography of IHRMP publications can be found on the World Wide Web at <http://danr.ucop.edu/ihrmp/all.html>. As of spring 1997, there were more than 250 titles listed.

having to rely on the county for a larger positive vision, and on the General Plan amendment process to limit impacts of development at a larger scale.⁸

CEQA and the county General Plan process have frequently failed to address cumulative impacts across a landscape (Johnston and Madison 1991, 1994; Landis et al. 1995). This has proven to be especially problematic in the case of oak woodlands, where the landscape-level cumulative impacts of development have not been well understood (Doak et al. 1988; Whittington and Tietje 1993; Tietje and Berlund 1995). It is clear, however, that the dominant impacts on California's oak woodlands have been caused by increasing urban and ex-urban development (Bolsinger 1988). The institutional setting of oak woodland land-use decision-making is, therefore, primarily at the local (county and municipal) level, and secondarily at the state level (CDF). In order for CDF to have any regulatory impact on such land-use decisions, cutting in oak woodlands would have to be subject to timber harvest review or timberland conversion, and that process would have minimal impact on land-use conversion. Furthermore, the Board of Forestry has repeatedly declined to establish regulatory oversight of oak harvesting or cutting (California Board of Forestry 1987). In any event, Standiford and Howitt (1993) have shown that timber harvest on oak woodlands (e.g., fuel wood cutting) and large-scale conversion for grazing have comparatively smaller impacts on oak woodlands than does continuing urbanization.

Thus because of its limited legal authority under the Forest Practices Act and its de facto administrative focus, CDF would have relatively little ability to significantly affect the predominant sources of disturbance and decline in oak woodlands (Mayer et al. 1985; Doak et al. 1988).⁹ Consequently, an "institutional gap" appears to exist between the oak-habitat problem and most of the available institutionally based solutions.

The California Department of Forestry and Fire Protection initiated the SLPs in part to span this institutional-ecological gap. CDF sought out stakeholders who could represent both the geographical and jurisdictional extents of the

⁸ Although CEQA can technically affect the General Plan amendment process, this practice is rare in actuality. A General Plan revision, as opposed to an amendment, is the most likely circumstance under which the argument could be made for CEQA review. The General Plan would have to propose a fairly major change in land use or acceptable practices on a sufficiently large scale to meet the test of "significance". Since most of the zoning and acceptable practices that affect oak woodlands are already in place (e.g., clearing for agriculture, ten-acre ranchettes, etc.), CEQA review is most likely to be limited to the project level.

⁹ In their "Status Report" to the Board of Forestry, Mayer et al. (1985) identify key issues affecting hardwood management and policy-making in California, one of which notes that there is some confusion about which lands in California come under the jurisdiction of the Forest Practices Act, and thus, CDF and the Board's authority. In the subsequent report to the Board, revised on September 8 and forwarded to the Board as a staff report, this issue appears to have been dropped. Our interviews in this study corroborated Mayer et al.'s 1985 findings of divergent "street-level" opinions about state authority to regulate activities on oak woodlands under the Forest Practices Act.

oak woodlands in both the Central Coast and the Northern Sacramento Valley regions. The agency hoped that by providing an opportunity to develop analytical tools and consensual measures of sustainability, local and regional institutions would then develop appropriate incentives and policy.

Trend 2. Education and Incentives vs. Regulation and Disincentives

Many feel that the natural resources regulatory environment has recently proven itself unwieldy and overly burdensome in many areas, and is now the subject of scrutiny by those who would prefer meeting regulatory standards through positive incentives rather than penalties. For example, the US Environmental Protection Agency has invested millions of dollars in its incentive-based regulatory programs, such as Project XL, which encourages industrial polluters to develop solutions by offering tax credits and other incentives for environmental research and development. Negotiated rulemaking engages the regulated community in developing standards and protocols that all sides can live with and still meet scientifically defensible goals (US Environmental Protection Agency 1997b). EPA's Community-Based Environmental Protection (CBEP) project also strives to include multiple stakeholders and multiple issues at the community level in meeting federal regulatory obligations for water and air quality, and it attempts to find solutions that are as equitable to as many players as possible (US Environmental Protection Agency 1997a).

Likewise, the Natural Resources Conservation Service has complemented its new regulatory role in protecting agricultural wetlands and vernal pools with several grant programs for conservation easements and on-farm restoration work (USDA Natural Resources Conservation Service 1997). The California EPA and the California Legislature are also looking at incentives as a way to reduce pesticide use while protecting the viability of the agricultural economy. Similarly, California's Department of Conservation is pursuing ways to provide incentives through permit streamlining (Reilly and Traynor 1997), and through strengthening Williamson Act provisions for keeping agricultural land in production while providing habitat for critical species (American Farmland Trust 1995).

Two of California's most prominent incentive-based conservation approaches have been the Natural Communities Conservation Programs (NCCP) and the Multi-Species Habitat Conservation Plans (MSHCP), which use mitigation banking, land acquisition, and landscape-level planning to identify and conserve multiple-species habitats. In each of these cases, adding education and incentive-based approaches to a framework of regulations is an over-arching theme. While there are significant criticisms of these approaches, the net result has been a growing public expectation that incentives and education should, wherever possible, precede regulation. The California Biodiversity Council has made this a predominant theme in

almost all of its discussions throughout the state for the past three years. As recently as its March 1997 meeting in Visalia, local interests presented the Council with numerous stories about ways the Endangered Species Acts (state and federal) encourage producers to invest in habitat destruction, rather than risk more innovative solutions that required agency cooperation and education (California Biodiversity Council 1997).

The upshot of this approach has been a greater focus on the education and self-interest of those whose actions threaten the survival and viability of the resource in question. By offering information and greater inclusiveness in coming to land-use solutions, and less pressure to degrade the resource, management agencies that embrace such an approach hope that landowners, developers and commodity producers will “do the right thing” and join in conservation efforts. In other words, stakeholders hope to “do well by doing good.”

The California Board of Forestry determined that it would take an educational and incentive-based approach to conservation of California’s hardwoods and oak woodlands. On July 1, 1986 the Board initiated the Integrated Hardwood Range Management Program (IHRMP). The original charge of the IHRMP was to encourage locally viable, non-regulatory solutions to the destruction of oak woodlands through research, education and monitoring (California Board of Forestry 1987; Standiford and Bartolome In press). While initially focused on hardwoods on commercial timberlands and the clearing of rangeland to enhance grazing, IHRMP research soon established that urban development and ex-urban migration were putting increasing pressure on oak woodland resources. IHRMP expanded its educational efforts to include landowners in developing areas, particularly in the Sierra Nevada foothills (Giusti, Schmidt, and Churches 1991). More recently, IHRMP has contracted with the California Oak Foundation to “assist IHRMP efforts at urban public outreach and improving links with the development and planning communities” (Standiford and Bartolome In press: 5).

As we explore in the following chapters, CDF initiated the Sustainable Landscapes Projects in order to augment IHRMP efforts by adding a layer of capacity building at the subregional level among key leaders and scientists. The SLP experiments were to complement IHRMP education, research and monitoring efforts and engage local leadership in a self-education process so that they would be in a better position to influence local policies and programs in a broad range of arenas. The key innovation of the programs was to see if non-regulatory, information-focused efforts might, in turn, influence the development of binding policies without invoking the state regulatory mechanisms that discouraged local cooperative action.

Trend 3. Socio-Demographics and Land Use

Urban development results in increasing pressures on land and resources. Each wave of subdivision results in loss of habitat and amenity values (Collinge 1996; Laurance and Gascon 1997). With socio-economic diversification comes a conflict in values among old timers and newcomers. The result is a fragmented local constituency living on an increasingly fragmented land base, struggling to make land-use decisions that often result in reduced ecological values and degradation of the community's sense of well-being. Several programs and studies in California have recently addressed growth management and the impacts of urbanization on the state's economic and environmental health (California Office of Planning and Research 1992; Fulton and Moss 1995; American Farmland Trust 1995). However, the patterns of land use and conversion continue despite the studies that have established the resulting loss of critical habitat, increasing impacts on air and water quality, degradation of quality of life, and overall environmental decline.

Tim Duane (1996: 235–236) has demonstrated the connection between rapid development, demographic diversification and land-use conversion in the Sierra Nevada region of California. The greatest impacts of these patterns have been localized in areas of rapid growth or along key transportation corridors (e.g., Interstate 80 and State Highway 50). However residents' "commute tolerance" has expanded significantly in recent years, increasing the distance commuters are willing to travel to and from major population centers and developing areas in the foothills. The patterns of development in the Sierra foothills are varied, and determining how development affects oak woodlands at the landscape level still needs further research (Standiford, Klein, and Garrison 1996).

Similar patterns of development to those in the Sierra foothills have been identified in key oak woodland areas of the Central Coast region, as well as along the Highway 101 corridor north of San Francisco. Increasingly, local constituencies support displacement of traditional commodity uses of oak woodlands (e.g., grazing, agriculture, etc.) by encouraging development of amenity values (e.g., open space, urban buffer zones, etc.). Huntsinger and Fortmann found in two surveys, conducted in 1985 and 1992 in the Sacramento Valley, that landowner values toward oak woodlands had shifted toward wildlife habitat, erosion control and aesthetics. They found a strong correlation between shifts in values and patterns of land ownership, with a significant growth in the small ownership category (< 200 acres) over the seven years between surveys. Most notable was the correlation between average annual income among small landowners and the decrease in average parcel size, indicating a dramatic increase in ex-urban migration into oak woodland regions (Huntsinger and Fortmann 1992). Changes in attitudes among large landowners were also noted, due in large part to intensive education and outreach efforts of IHRMP and local Cooperative

Extension representatives, resulting in a 20 percent decrease in the number of large landowners clearing oak woodlands for forage enhancement, and an 18 percent decrease in firewood-cutting (Standiford and Bartolome In press: 8).

It is not clear from these sources how much of the change in attitudes was due to education, and how much due to the importation of urban aesthetic values into the oak woodland landscape. The point, however, is that as the demographic profile changes at the local level, significant changes are likely occur in the values of those who are in a position to influence, and more importantly to veto, land-use practices and conversions. Since most of California's ex-urbanizing development during the past decade has occurred in oak woodland regions (Stewart 1991), one can anticipate that the constituency for protecting aesthetic and amenity values in oak woodlands will tend to be strong in these regions.

The SLP began on the Central Coast with a focus primarily on the biological and ecological factors affecting oak woodlands. While policy issues were acknowledged as important, the eventual merger of the technical and policy committees indicated a growing recognition that understanding social, economic, demographic and political issues was perhaps as important to the long-term sustainability of oak woodlands as knowledge of their ecological dynamics (see chapters two and four). As interviews with project participants showed, stakeholders see ex-urban development and urbanized perceptions of oak woodlands as having the greatest impacts on the management and protection of the resource and being the most difficult factors to address.

Trend 4. Subregional Networks, Social Knowledge and Governance

Over the last fifteen years, cooperative efforts in resource management between private and public stakeholders have been increasing at the local level in California and the United States. While public-private cooperation in natural resources management is not the least bit new (for example, the USDA's Soil Conservation Service, now the Natural Resources Conservation Service, was founded on this principle in the 1930s), what is relatively new is the type and number of local, multi-stakeholder efforts.

Studies and surveys in California¹⁰ indicate that local, landscape or regional efforts to coordinate, integrate and participate in land- and natural-resources

¹⁰ The existing "data" on local partnerships and cooperative management is quite weak. The most complete and robust source of these data in California is the California Watershed Projects Inventory (CWPI), which catalogs more than 300 projects. It may be accessed via the World Wide Web at <http://ice.ucdavis.edu>. The other major data source is rough and incomplete at this point: the California Biodiversity Council's database of more than 100 "Watershed" and "Landscape" groups. While certainly not designed for analytical work, its current configuration provides a very useful information locator service that allows agencies and other interested parties see what other watershed groups and partnerships are doing: <http://ceres.ca.gov/biodiv>.

planning and management number in the thousands in California alone. The lack of accurate information on such efforts has prevented development of a satisfactory typology of organizations or cooperative operations. However, a very cursory analysis shows that perhaps one-third of these efforts fall under the broad classification of Coordinated Resource Management and Planning (CRMP), which involves private landowners and local interests at the watershed or sub-watershed scale. Another one-third can be classified as interagency or public-agency advisory and planning bodies whose chief focus is to provide input into agency planning and management efforts. Somewhere between 100 and 150 of these efforts are regional or landscape in scope (i.e., covering several watersheds or a large biogeographic region), and they vary in their mix of public and private stakeholders. Their general purposes are to integrate planning and management across several issues including natural resources, social well-being and economic development. Still other groups are loosely knit networks of local interests that have formalized and aligned themselves with local public entities in order to qualify for various governmental grant programs.¹¹

It is increasingly important for planners, decision-makers and stakeholders to understand the roles played by loose networks of actors in local resource decision-making. While they often become “visible” in response to a particular crisis, these networks appear to be the sociopolitical matrices from which more formalized governing institutions are born. Much of the formal study of “issue-networks” has been focused on international regimes and, until recently, has relied on documenting linkages among NGOs and governmental entities (Haas 1992; Fukuyama 1995; Keohane and Ostrom 1995; Thomas 1997b). One scholar of international decision-making networks describes issue-networks as “a set of organizations, bound by *shared values* and by *dense exchanges of information and services*” (Sikkink 1993). These dynamic networks of exchange are proliferating at all levels from local to global. Each level shares dynamics in common with the others that make the focus on networks, as opposed to formal institutions, key to understanding behavior and outcomes. Three prominent points of convergence are a) heterogeneity of actors; b) “underprovision of effective arrangements to enable participants to cooperate” (Keohane and Ostrom 1995: 3); and c) a robust level of innovation of rules and institutions for cooperation. While the literature is still in its early stages, it shows promise in helping to understand the social networks that influence and underpin the performance of what may be called “local cooperative resource management regimes.”

Local decision-making processes increasingly rely on local networks of actors whose common identities are bound by a sense of place and

¹¹ For example, Clean Water Act 319 and 205j grants, as well as numerous USDA partnership funding programs.

belonging (Lipschutz 1996: 217-233). These networks develop their own dynamic rules of interaction and governance, in many circumstances functioning as effectively as formal government authorities in the enforcement of rules and norms of behavior (Ostrom 1990; Ellickson 1991; Rosenau and Czempiel 1992: 4-5; Czempiel 1992: 250 ff.). On occasion, these networks (or some subset) may become formalized through memoranda of understanding or quasi-formal mechanisms that establish loose parameters on the sharing of information and resources (Anderson and Baum 1987; Nechodom 1994). However, it is important to understand that, while landowners and agency representatives may put their signatures on documents that essentially constitute a handshake and a commitment to mutual good will, the truly operative network of actors often remains invisible.

The accumulated experience of local cooperative efforts has increased the political cachet and credibility of appeals to localized decision-making processes.¹² Increased availability of information, a broad diversity of knowledge among local constituencies, and reductions in agency resources have accelerated the trend toward involvement of multiple stakeholders in all stages of the adaptive management cycle.¹³ Many stakeholders may engage in cooperative management regimes because they hope to reduce transaction costs in achieving the goals they would pursue otherwise (North 1990; Ostrom 1997). Yet, at another level, they may also contribute to reframing the conceptual framework within which property rights, public trust and management authorities are understood (Lipschutz 1996: 41-43; Kusel 1996a).

In the case of the SLPs, CDF sought to engage regional operative networks in “constitutive”¹⁴ exercises to define measures of sustainability. Beyond the formulation of rules and norms of landowner behavior, these groups ideally were to develop a collective “gestalt” upon which principles of sustainable management practices would be founded. As we will show in the following chapters, CDF also hoped to encourage a local network of actors to enhance the effectiveness of governance to grapple with conservation issues that cross existing jurisdictions, vis-à-vis the sustainable management of oak woodlands.

¹² See the various reports of the California Biodiversity Council (footnote *supra*). This trend was especially apparent in the workshops soliciting the comments and recommendations of experienced local practitioners of multi-stakeholder cooperative efforts (Nechodom and Madison 1997).

¹³ By “adaptive management” we refer to the four-stage iterative cycle of: problem definition, solution development, project implementation and program monitoring and evaluation (Gunderson, Holling, and Light 1995).

¹⁴ We use the term “constitutive” here in the same way Ostrom (1990, 1992) uses it, to distinguish such exercises from “operational” activities. In the constitutive phase, groups are engaged in rule-making and in framing the terms upon which their collective actions will be based. In the operational phase, group actions are largely focused on enforcement or amendment of constitutive rules. While the SLPs do not strictly speaking fit Ostrom’s model of Common-Pool Resource (CPR) management institutions, one of the SLPs’ tasks was to develop measures that would eventually guide constitutive policy development within appropriate institutions.

It is probably significant that FRAP took the lead in initiating the SLPs. In a broader context, CDF as an agency has long been a leader in local cooperative involvement because of its history of engaging private landowners in developing prescribed burning agreements. The agency has a mission and scope of authority that forces it to work closely with local governments and private landowners, especially given its combined responsibility for wildland fire management and review of private sector timber-harvest plans. CDF was among the first agencies to join in the effort to form the statewide Coordinated Resource Management and Planning Executive Council in 1980, having fostered many CRMPs with private landowners to address rangeland fuels issues throughout the 1970s (Anderson and Baum 1987; Nechodom 1994).

More specifically, as mentioned briefly above, the SLP concept was developed by leadership within CDF's FRAP "think tank," whose efforts also provided much of the impetus for the formation of the MOU on Biodiversity upon which the California Biodiversity Council was founded (California Biodiversity Council 1991; Jensen 1994; Nechodom 1994; Thomas 1997a). The conviction that social resources are as important to the conditions of California's natural systems as are ecological systems has long been one of FRAP's intellectual underpinnings.¹⁵ It is therefore not surprising that the Sustainable Landscapes Projects would be generated by a group whose intellectual orientation would encourage them to experiment with social and natural systems management. Given the emerging importance of a localized focus on regionalized ecological problems, the SLPs were to become natural experiments in regional capacity-building and the deliberate fostering and inclusion of de facto local authority in decision-making processes.

In the following two chapters we provide details of the origins and evolution of the Central Coast and Northern Sacramento Valley SLPs. These chapters are organized thematically and somewhat chronologically in order to suggest some of the structure of the analytical model presented in chapter five. The principal investigator of both projects authored the following two chapters; they deliberately present a narrative point of view.

We also attempt to draw lessons from the histories and stories of the participants in each of the SLPs. Much of the material in chapter four, "Lessons Learned," relies on in-depth interviews and conversations we carried out with more than two dozen project participants and key actors. We

¹⁵ One need only peruse the publications of the FRAP unit, including its 1988 Assessment (California Department of Forestry and Fire Protection 1988) and its ongoing assessment documents (currently under development), to see this approach.

also present several recommendations in chapter four that are directly drawn from the feedback from project participants.

Chapter 2: The Central Coast

The Project Manager/Principal Investigator wrote this and the following chapter for the Sustainable Landscapes Projects. In this capacity the Project Manager was the liaison with CDF and the participants in both projects, attending almost every subcommittee, committee and steering committee meeting as well as the framing, technical and educational workshops from 1992 to 1997. The Project Manager thus brings the unique perspective of having worked closely with all parties in the project, both formally and informally. The purposes of chapters two and three are to provide a narrative overview and summary of the main events that occurred in the two projects, and therefore develop a context for the analysis that follows in chapters four and five.

Introduction

The Central Coast Sustainable Landscapes Project began in 1992. The project covered the five counties of the Central Coast bioregion: Santa Cruz, Santa Clara, Monterey, San Benito, and San Luis Obispo counties. Participants officially began their work in January 1993 with a series of monthly meetings and subcommittee meetings, and continued meeting into 1994. The participants completed their consensus document, "The Central Coast Sustainable Landscapes Project, Phase I," in July 1995 (Greenwood 1995). In all, more than 85 people from throughout the Central Coast participated in the project.

This project was CDF's first Sustainable Landscapes Project. Representatives of FRAP began by explaining that their goal was to bring together a group of people from throughout the Central Coast bioregion to explore and quantify the concept of a *sustainable* oak woodland landscape. Specifically, CDF's goals were to:

1. develop analytical tools;
2. help policy makers use those tools for decision-making; and
3. increase local awareness of oak woodland conditions.

At a preliminary meeting held in San Luis Obispo in September 1992 to discuss the project, a CDF representative explained that the agency wished to encourage local development of hardwood habitat management policies, but believed that policy-makers at the local level did not have the necessary information or analytical tools to create effective policies. From the agency's perspective, policy-makers and planners lacked a quantifiable long-term vision of what oak woodlands should look like, and thus a context for decision-making. CDF made it clear that the purpose of the project was *not*

to develop hardwoods policies, but rather to develop analytical tools that policy makers could then use to shape the development of hardwood policies throughout the Central Coast.

CDF asked Common Ground: Center for Cooperative Solutions, at the University of California, Davis – a public policy mediation center – to implement the project. Representatives of CDF had expressed the view that agencies develop many informational tools that are subsequently disregarded. One reason appeared to be that end users are not usually involved in the formation of the tool itself, and therefore might not trust the content and form of the information, nor find it relevant. CDF had first thought that bringing together a diverse group of stakeholders and technical experts from the Central Coast with assorted backgrounds and expertise on oaks would help to address this problem. Instead, members of Common Ground attending the preliminary discussion suggested that such a tool would be more workable and relevant if the group developing it included policy-makers and stakeholders from the region, in order to provide ongoing and useful feedback.

At the preliminary meeting, CDF representatives also emphasized the importance of approaching sustainability from a *landscape* perspective, reflecting FRAP's view that taking a broader landscape or regional view of the resource would provide a policy-making framework that would be more consistent with hardwood ecology than the traditional jurisdictional county boundaries established without regard for oak woodlands. By developing a landscape-level tool, then, hardwood habitat management policies would be more consistent among the counties, and thus more beneficial in the long term to the hardwood resource.

Although not clearly articulated by CDF at the time, and not well understood by participants at the beginning of the project, CDF had hoped to use GIS as a key tool to help the participants conceptualize and quantify their vision of a sustainable oak woodland landscape. The underlying assumption of the workplan was that the SLP participants – through their observations, knowledge and available research – would identify information that could be used to create a series of GIS overlays of the regional hardwood landscape. Further analysis of the overlays would produce a “picture” of the region. As the group considered potential components to measure and assigned values to them, they would engage in an iterative deliberative process of testing their hypotheses, using an increasingly accurate “picture” to determine which measures and ranges of values would be valid. They would then assign various values to begin examining possible desired future conditions.

GIS would enable them to see the interplay between their technical knowledge, the identification of potential measures and criteria, and the development of the various future scenarios. Participants would then be able

to articulate a range of biological measures and criteria that would describe a sustainable oak woodland landscape. Using informational tools to examine scenarios based on potential land use policies, policy makers and planners could then determine the degree to which proposed policies were consistent with a sustainable hardwood landscape.

Setting Goals and Objectives

Based on the discussions at this initial meeting, Common Ground invited a broad-based constituency of participants, including technicians, scientists, policy-makers, planners, landowners, county supervisors, agriculturists, environmentalists and others from the region to a meeting in Salinas in January 1993 to discuss CDF's goals for the project. After representatives from CDF presented their overview, the participants divided themselves into two committees, one advisory and the other technical, to discuss their own goals and perspectives. The Advisory Committee quickly identified its aims and expectations at the first meeting. These policy-makers and planners wanted tools that were clear, simple, inexpensive and accessible so that they could make intelligent and justifiable decisions related to oaks at the county and project scale. They were accepting of a landscape-level approach, as long as they could achieve their day-to-day objectives. Landowners, however, wanted tools that would promote procedures supportive of their interests and practices as land stewards, most specifically incentive programs rather than regulations, (which they viewed solely as a tool of last resort).

In spite of the overview presented by CDF at the first meeting, the Technical Committee was much less clear about both its role and its goals from the beginning. The first challenge committee-members faced was that each represented a different discipline, and therefore held entirely different perspectives towards every aspect of the project. This was increasingly apparent as the group attempted to develop the meaning of sustainability in oak woodlands and address the scales at which sustainability could be measured. Participants on the Technical Committee included biologists, ecologists, foresters, geologists, soils scientists and cooperative extension specialists. Additionally, each technical participant represented an agency or institution that had a particular perspective, need and interest that it wanted to meet through participation in the project. While these issues were reconcilable, the SLP was also asking the technical participants to adopt a completely new paradigm by examining sustainability from a landscape perspective. Moreover, members of CDF initially expressed a belief that some conclusions would be immediately obvious and consensus on them could be reached fairly quickly. However, the Technical Committee members found that each step toward examining issues of sustainability, including developing a basic definition of sustainability, was necessarily time-

consuming as members worked to reconcile and incorporate their divergent views on each fundamental issue.

Developing Plans and Tools

Reflecting both the philosophy of Common Ground as well as CDF's initial wishes, Common Ground implemented the project using a traditional interest-based, collaborative problem-solving model. Thus, Common Ground facilitators invited representatives of groups with interests directly related to hardwoods, as well as others who expressed an interest in the project, to each meeting. Next, Common Ground encouraged the SLP participants to take ownership of the project by reframing the work plan. Between meetings, Common Ground sent each participant notes recorded by Common Ground staff, along with the public record of the Advisory and Technical committees work, and then incorporated written responses into the subsequent meeting's discussion. After the first joint meeting in January, the two committees did not meet together again until May.

Between meetings, a Steering Committee consisting of the facilitator, Project Manager, representatives from the Technical and Advisory committees and the GIS representative met to discuss and shape the next meeting's agenda. CDF representatives did not participate in these meetings, but the Project Manager provided regular updates to FRAP staff. Attendance was strong at every meeting in the Central Coast Project, and parties from throughout the region asked to join the project all through the year, in spite of the fact that many of them had to drive long distances to attend.

It is worth noting that Technical Committee members had no similar models to utilize in beginning their work in 1993. Therefore, as a first step, participants quickly collected an array of written materials from CDF and other regional research sources about oaks in the Central Coast. Also, over the course of the next three meetings, Technical Committee participants reconstructed their workplan and began to develop working definitions of sustainability, landscapes, scale, measure and criteria. As part of this discussion, Technical Committee participants had to sort out whether they were going to focus on individual oak trees and stands, or the ecological habitats of which the trees were one component. Participants eventually decided on the latter.

The Technical Committee members found "sustainability" to be such an abstract concept and susceptible to so many meanings that they revised their working definition several times throughout the project and continued to discuss it until the final meeting. Additionally, as they began defining and identifying measures related to the sustainability of the oak woodlands during early meetings, they confronted the issue of which measurements would be appropriate to use.

While CDF had described the project in terms of biological measures, one participant introduced the idea that a description of a sustainable oak woodland would not be complete unless it also included economic, political and social measures. Over a period of time, participants in the project reached a general consensus that this view had validity. However, attempting to identify and describe such an array of measures significantly increased the scope and therefore the complexity of the project. Members of FRAP did not originally conceive of integrating these measures into the exercise, and did not attend the meetings at which these issues arose initially. Therefore, they were unclear on how this perspective could be practically incorporated into the exercise, and were skeptical that they could be translated into landscape level measures and criteria. After the third CC SLP meeting, several members of FRAP concluded that this was an appropriate time to introduce GIS as a tool for the group. The Landscape Architecture department at Cal Poly San Luis Obispo hosted a GIS workshop for the Technical Committee members. But in spite of the workshop's efforts, participants had a difficult time incorporating GIS into their work throughout the project. From the beginning, members had difficulty identifying the kinds of information they wanted a GIS tool to represent spatially. First, some members believed it was necessary to reach agreement regarding acceptable measures in order to determine what information should be included in the maps. Then, when the group did identify the information it wished to incorporate, the data was often unavailable or obtainable only at a scale that participants did not consider useful. At the same time, FRAP had expected the GIS representative to tell the group what should be in the layers and provide that data to them. The GIS representative, on the other hand, appeared to believe that the group needed to articulate its needs through its own process, rather than have their needs anticipated. In effect, a frustrating and circular dynamic ensued in the GIS portion of the Central Coast Project.

The end result was that GIS, the tool that could and should have been most instrumental in helping participants visualize their hypotheses, remained under-developed and did not in the long run help the group to visualize potential measures and criteria or to consider their ideas at a broader scale. The SLP members believed that GIS would become relevant later, after they had developed a clearer vision of potential measures and ranges of values that could be assigned to those measures. In the end, participants used only the tools they thought were available to them – their personal knowledge, information and research collected from throughout the Central Coast, and field observations.¹⁶

¹⁶ It is worth noting that this type of regional GIS application was being developed in the Central Coast during 1996 and early 1997 under the leadership of the Association of Monterey Bay Area Governments (AMBAG).

The Steering Committee believed that the Technical Committee needed to have several separate meetings at the beginning of the project in order to formulate goals and objectives, and begin to identify measures of sustainability. The Advisory Group had identified its needs rather easily, but because of the diversity of approaches, the new paradigm involved, and the complexity of the threshold issues with which it was dealing, it took much longer for the Technical Committee to sort out basic issues than the Advisory Committee.

By their fourth meeting, the Steering Committee believed that it was time for the Technical Committee to share its progress and receive feedback from the Advisory Committee. Thus, at the meeting held in late spring 1993, members of the Technical Committee discussed their progress to date in a joint meeting with the Advisory Committee. As members of the Technical Committee discussed initial issues related to identifying measures for the hardwoods, it became clear that members of the Advisory Committee also had important information and perspectives to share related to these issues. And in turn Technical Committee members had perspectives on how their work would relate to the formation of hardwood policies. As a result, the participants decided that the distinction between the committees no longer served a useful purpose.

The two groups decided that it would be more productive to meet as one committee for the remainder of the project. In this way all of the participants could exchange perspectives and work through issues of sustainability together. This resulted in much richer exchanges at meetings and in mutual education for all members of the project. Policy-makers, planners and implementers developed a greater understanding of the technical perspectives and the difficulty of coming up with “simple tools” when dealing with risks and various levels of uncertainty. At the same time, the Advisory Committee members challenged the technical members to find ways of creating usable tools in spite of these uncertainties.

Determining the Measures of Sustainability

Over the course of the remainder of the meetings, the group as a whole grappled with a series of issues related to sustainability. One particularly troublesome issue concerned the scale at which to examine sustainability. CDF wanted the group to examine sustainability from a landscape perspective. However, because of the varied professions and perspectives of the participants, many on the committee, particularly the plant ecologists, took a somewhat reductionist view that the landscape was only the sum of the stands, and the stands only the sum of the individual trees. As a result, they believed it would be possible to move to the landscape level only after thoroughly investigating the stand level. Moreover, they were concerned that over-generalization of measures would lead to errors in the evaluation of

sustainability – i.e., the broader the scope, the greater the potential level of uncertainty.

From CDF's point of view, if the group had been using GIS as a tool, they would have more easily been able to visualize options at this broader scale, allaying concerns about identifying measures at the landscape level. Planners in the group also advocated approaching sustainability at the landscape level, since they and others on the committee wanted tools to develop consistent policies to protect oaks throughout the region. In the end, the group focused a great deal of its work at the stand level and identified a number of stand-level measures, along with several landscape-level measures.

After many discussions, the group finally decided to include all of the measures that they had found in the literature and had developed through observations and field experiences. Every measure that was suggested by the Committee, if not proven to be invalid, was included in the list, even though some of the measures had not been universally accepted within the Committee. The Committee's idea was that each measure would have to be "field tested" in order to be considered useful and part of the final group. This was not a part of the process that CDF had envisioned as part of the SLP.

After much discussion, the Committee decided to group all of these measures into three indicator categories of sustainability: oak regeneration, wildlife, and socio-economic. A strong consensus existed among the group that each was of equal importance, but members recognized in their initial work that the categories could not be given equal treatment, due to the differences in information available from quantifiable data. Although members of the group spent most of their time discussing the regeneration issues, they concluded that despite the long record of studies on this subject, the subset of measures that would "best define regeneration potential or success remains equivocal within the general scientific community" (Greenwood 1995: 3).

As a result, a number of Committee members decided that it would be necessary to field test and validate the measures at the stand level. Those validated could be used as tools at a larger or landscape scale. Two members of the Committee devised a method of field observation and later validation, i.e., the "walkabout," focusing on measures and criteria critically associated with sustainability (Greenwood 1995: 34-35). The idea would be to use recruitment as a criterion to search for oak woodland communities that appeared to be sustained/sustainable, and to then describe all associated measures. "Information gathered from detailed evaluations is broadcast to the greater landscape through GIS extrapolation and other tools" (Greenwood 1995: 35). This process could also be used to look at some aspects of wildlife conditions and land-use changes. Members of FRAP

initially viewed the idea of field observation and later validation unfavorably because they believed that the stand examination was an unnecessary step in taking a landscape view. FRAP representatives thought that an effective GIS system might have changed the SLP's perspective away from the focus on the stand level. However, this may or may not have been the case, since, as noted above, the group was very much concerned about levels of uncertainty at the landscape level and how to deal with this issue in providing a useful and valid tool for policy-makers and planners.

Sustainability and planning at the regional level was a consistent theme running through committee meetings. A number of committee members brought a regional planning perspective to the SLP because of their prior involvement in organizations such as the Central Coast RC&D. As a result, some members began to explore a regional approach towards hardwoods policy-making, which they believed would naturally evolve out of the Sustainable Landscapes Project. In fact, one of the planners from Monterey County presented to the group a comprehensive, regional, multi-jurisdictional planning and management model that integrated educational, planning and technical information (including measures and criteria at the landscape level) into a management program for the Central Coast bioregion. The model also included a monitoring and feedback system, and anticipated implementation of a regional GIS system.¹⁷ This was an important attempt to integrate technical information and policy/planning needs into a broader regional conceptual framework. Committee-members, especially those from planning and policy-making backgrounds, responded positively to this model.

At the suggestion of several project members, the Principal Investigator asked the director of a local land trust to help develop a report on the SLP's work to date. This report became the source of a great deal of frustration and conflict towards the end of the project, even though the report itself had been part of CDF's original workplan. While such reports are not unusual for a government-sponsored project, the Sustainable Landscapes Project was not a typical technical project. Furthermore, CDF had not clearly articulated the purpose, audience and content of the report. It was uncertain whether the report might be for CDF and the Board of Forestry, policy makers in the Central Coast, an education or policy tool for citizens about the state of the oaks, or a basis for recommending certain types of management strategies that would help to sustain the oaks in the future. Because varied views existed about the purpose of the report, members of the combined committees and CDF rejected the first draft. Some project members viewed this first report as self-serving and biased. A group of project members subsequently took over writing the report and developed it as a group consensus document. The report reflected the group's thinking and final

¹⁷ The plan was presented to the project members for review, and subsequently incorporated into the Phase I final report (Greenwood 1995: 45-47).

agreement regarding some themes and also identified unresolved issues that the SLP members wished to continue to explore in the next phase of the project.

Products and Outcomes

The project continued for three years, producing the following outcomes:

1. A final report describing proposed measures and criteria of sustainable oak woodlands;
2. A "walkabout" that was to test both the proposed measures in the field as well as a methodology for documenting the group's processes;
3. A Central Coast RC&D regional plan, produced as a continuation of the CC SLP work; and
4. Increased technical capacity and networks of communication among regional institutions, such as Cal Poly San Luis Obispo, county planning departments, and regional NGOs.

After the end of the one-year project, as reflected in their report, the Central Coast participants concluded that they had reached the end of their first phase of work. They viewed themselves as still having much to do. Enthusiasm continued to be high. Some members wished to continue their exploration of measures and criteria by engaging in field-testing and validation of those that they had already identified. Participants also expressed a desire to develop a regional information system to support continued SLP work and work of other regional projects.

CDF clearly wished to see the group continue its work, according to comments from FRAP participants. However, the agency encouraged the group to find a way to continue the effort within the region by supporting their work with local and regional resources. At the final meeting of the group, the Central Coast Resource Conservation and Development District (RC&D) offered to incorporate the future work of the SLP into its long term area work plan, and the project members voted to accept this offer. Some participants believe that ultimately this transition to an existing regional group with its own interests and goals stopped the SLP group's technical work that had been focused on measures and criteria. For example, it was not until two years later that the first and only field observation and validation (the "walkabout") occurred at a participant's ranch.

While the members felt a strong investment in their work, no one person emerged to provide technical leadership and direction to drive the process on. This may have been a key factor in the group's lack of progress.

Technical participants expressed frustration because they felt that they had had the potential to reach resolution on means and criteria. Policy-makers and planners expressed disappointment because the anticipated planning tools did not emerge from the work.

Nevertheless, the Central Coast RC&D did incorporate many threads of the Sustainable Landscapes Project into its area plan. For example, a number of CCRCD/SLP members have participated in the long-term coordinated planning effort in the Pajaro River Watershed, a multiple-county effort which focuses on hardwoods, among other natural resources. Several of these participants have expressed the belief that this effort has direct links to the Central Coast SLP. Also, the Central Coast RC&D has played an important role in working with the Association of Monterey Bay Governments (AMBAG) and other groups in bringing to fruition the regional information system first envisioned in the Central Coast SLP. In effect, members of the Central Coast RC&D believe that they have taken up where the Sustainable Landscapes Project left off and have carried at least part of this effort forward.

Summary

We conclude that the Central Coast Sustainable Landscapes Project was an ambitious experiment that, in some ways, worked much better than was originally envisioned. However, it was at the same time frustrating to both agency representatives and participants. On the one hand, attendance at the meetings was high, even though participants sometimes had to travel long distances to reach a meeting. More than 85 individuals participated in the project overall and, in effect, their mutual education planted the seeds for ideas and approaches that could and would be used in other natural resource projects involving the hardwoods in the region. In the end, the volunteer participants could not resolve what turned out to be complex issues as quickly as, or in the way that, CDF had envisioned, creating a sense of frustration for both the participants and agency representatives.

CDF had not taken into account that local perceptions and needs were not *necessarily* compatible with its own. CDF representatives had underestimated the complexity of their charge to the group and did not fully understand the participants' own approaches to the problem. For example, members of the agency initially wanted a somewhat narrow biological description of a sustainable landscape. Participants from the Central Coast took a much broader view of sustainability. Thus, although CDF had wanted to empower a local group, it may have had difficulty dealing with the consequences.

Additionally, the tools that might have assisted the group in reaching CDF's goals, such as GIS, did not materialize. This had a significant impact on the

work and perspective of the group. Moreover, CDF did not clearly articulate the outputs or products it hoped to produce to the satisfaction of the participants. For example, time spent on the final report, whose purposes were not clearly conceived, created much ill will. Furthermore, CDF's goals (including its internal political needs and expectations) as well as its measures of success, were not clearly enough articulated to the participants, thereby creating an ongoing sense of distrust between participants and the agency.

By failing to do a preassessment, CDF also lacked sufficient information about the environment in which the project took place that could have helped them predict project outcomes, areas of political success and potential roadblocks. In summary, because this was a new and experimental project, many assumptions that were made by all of the parties proved to be untenable for the project as originally conceived and designed. Nevertheless CDF's FRAP representatives learned a great deal from the Central Coast SLP and sought to utilize that understanding in their next SLP project, in the Northern Sacramento Valley. The Central Coast SLP proved to be an important experiment and has left a positive legacy in the region in spite of its incomplete work. It also provided many insights that could be utilized in the Northern Sacramento Valley. As the Central Coast Sustainable Landscapes Project ended and the Northern Sacramento Project began, representatives from CDF were eager to incorporate what they had learned into the next segment of their work.

Chapter 3: The Northern Sacramento Valley

Introduction

The Northern Sacramento Valley Sustainable Landscapes Project began with a project preassessment in spring 1994. The project covered five counties: Glenn, Colusa, Tehama, Shasta and Butte. Participants began their work in the fall of 1994 with a series of framing meetings, and finished the first phase in the early part of 1997, having provided a series of educational workshops and developed a GIS hardwoods information system for the Northern Sacramento Valley.

Because some of the initial assumptions and hypotheses from the Central Coast Sustainable Landscapes Project had proved inaccurate (see discussion in previous chapter), CDF worked with Common Ground to analyze and incorporate lessons from the Central Coast project into its work in the Northern Sacramento Valley.

One of the key lessons of the Central Coast project was the importance of understanding the bioregion's political and social climate before actually beginning the project. Thus, for this second project, Common Ground first spent several months engaging in a context assessment of the Northern Sacramento Valley. The goals of this preassessment were:

1. to identify both the human and technical resources that could be engaged in the project,
2. to determine existing regional attitudes towards and perceptions of the oak woodlands,
3. to explore the local authorities' receptivity towards CDF support of a project in the area,
4. to understand the political and social structure of the area, and
5. to identify possible outcomes of the project so that CDF would spend state resources wisely and set realistic project goals.

Preassessment Phase

The context assessment proved invaluable in providing information that representatives of CDF could use in clearly defining their goals and understanding the range of possible outcomes for the Northern Sacramento Valley SLP. CDF understood from the beginning that the Northern Sacramento Valley possessed limited human resources to focus on this effort. A very small number of highly dedicated individuals, including representatives of existing natural-resource community efforts, local and

regional agencies, landowners, and local and regional planners would be available to participate. Additionally, landowners expressed considerable reservation about any type of government involvement in their affairs, especially pertaining to planning issues involving natural resources on their lands. Moreover, regional coordinating institutions, such as a RC&D, were not readily apparent. At the time, it appeared that the project might well expect to contribute to a regional framework by developing a GIS-based information system.

On the other hand, the preassessment helped CDF representatives discover potential technical resources and institutional capacities at CSU Chico's Geography department. CDF concluded that their GIS lab was sufficiently well developed that, with some additional agency resources, the department could develop a regional GIS tool to evaluate oak woodland and hardwood habitat conditions.

The preassessment also revealed a general belief that the Tehama County oak ordinance, used as a model in several other counties, sufficiently addressed the hardwoods issues. Moreover, given the limited human and technical resources of the region, it was questionable whether potential participants, including elected officials and planners, would view the hardwoods as meriting further attention and energy. It became clear that one of the threshold issues that the group would need to deal with was the question of whether an oak woodland habitat problem existed of sufficient magnitude to warrant further attention.

The preassessment also showed that the form and approach to the Northern Sacramento Valley Sustainable Landscapes Project would need to be significantly different than those of the Central Coast SLP. After several weeks of interviews and background research, the preassessment report suggested five potential outcome scenarios for the NSV SLP. We summarize them briefly below:

1. The SLP centers primarily around county programs and existing county land use authorities;
2. The project focuses on county processes, but provides technical support to county-based cooperative projects. Participants meet to exchange information; may include educational programs
3. The project provides technical support and educational programs to cooperative projects going on in counties that elect to seek support from CDF. Participants are encouraged to take part in educational programs that expand the focus from project to landscape. Participants may seek to address attributes of

sustainable oak woodlands, although this aspect is not emphasized.

4. Same as #3 above, except technical assistance would be focused on a discrete SLP group, with encouragement extended to counties to participate.
5. Same as #4 above, but develop a series of workshops and educational programs focused primarily on a discrete SLP group, with emphasis on development of criteria and measures of sustainable oak woodland landscapes (similar to Central Coast SLP).

The range of potential outcomes from the second project presented both greater possibilities as well as greater limitations than the first project had. For example, concepts of sustainability and landscape ecology were more familiar to those working in the Central Coast region, supporting a more immediate grasp of the underlying SLP paradigm. At the same time, because of the limited human resources and the lack of a regional identity or framework, it was clear that any approach would have to incorporate the cultural and structural reality of county planning and politics, even though the oaks form a continuous band of habitat spanning the western, northern and eastern portions of the five-county region. Furthermore, much of the NSV hardwoods are found on private property, and the SLP project would need to take into account the extreme sensitivity of private property rights in the Northern Sacramento Valley.

Setting Goals and Objectives

As part of the regional assessment, Common Ground worked with representatives from CDF to clarify the agency goals for the project and to identify as clearly as possible what would constitute their measures of success and failure. CDF representatives proposed much more modest goals for the Northern Sacramento Valley than they had for the Central Coast. The representatives also recognized that they were facing a two-to-three-year time frame, which further constrained realizing even these modest goals. Agency representatives decided that a sole emphasis on sustainability at the beginning of their project had hindered the work of the Central Coast SLP participants. Instead, CDF representatives decided that if they stimulated the development of regional information capacity in the NSV, this could support the development of an informed oak policy and provide an important additional infrastructure to the region. Moreover, if and when the participants became ready and willing, they could use this regional informational tool to examine and define a sustainable oak woodland landscape.

Representatives at CDF decided that any further goals would be a positive addition, but would not be necessary for a successful project. They recognized the political and human resource differences between the Central Coast and the Northern Sacramento Valley. They also understood that as a state agency operating in a region where there is a great mistrust of government intervention, the first step would be to find a small cadre of people who would be willing to devote time and energy to the project.

Common Ground also worked with CDF representatives to redefine the agency's role in the process. With the Central Coast project, CDF had acted solely as a sponsor, providing the resources for the project, suggesting an overall workplan, and hoping that the agency's goals would be achieved. However, CDF discovered that being a critical outsider in the Central Coast was frustrating for both the agency and the participants and created a high level of suspicion and bad feeling on both sides. For example, a constant perception existed in the Central Coast that CDF was not being forthright about its motives or needs. Instead, by acting as both a sponsor and a stakeholder in the Northern Sacramento Valley, CDF representatives would be able to bring the agency's views, needs and interests directly into the planning, activities and discussions. At the same time, the agency's representatives accepted in principle that local participants often understand their own landscape better (physically, politically, and socially) than a state agency can. In effect, in the Northern Sacramento Valley, CDF set itself up to be both a convener and a participant in ongoing discussions of hardwood threats and policies. CDF would then be in a position to provide tools and resources – including maps, technical information, satellite imagery, etc. – that could be used as a basis for discussion and planning at the county and landscape levels.

Because of the preassessment phase of the project, representatives of CDF understood from the beginning that only a limited range of possible outcomes existed for the Northern Sacramento Valley SLP, and they accepted all possibilities as legitimate. Moreover, they recognized that preparing a final report would have little relevance to the overall goals of the project. Instead, they decided it would be better to focus valuable human and technical resources on enhancing the hardwood ecosystem resources through the development of a regional information system.

Framing Sessions

After clarifying CDF's goals and measures of success, and identifying the range of possible outcomes for the Northern Sacramento Valley SLP, Common Ground invited a group of people from the Northern Sacramento Valley to two framing sessions during the fall of 1994. Invitees represented a variety of perspectives towards hardwoods in the region. Participants included agency representatives, landowners, environmentalists, a member

of the Board of Forestry, CDF representatives, planners, educators and elected officials.

The framing sessions resulted in two key findings. First, the group concluded that there were few short-term threats to the hardwood landscapes of the Northern Sacramento Valley. However, the group also found that impacts of population growth and development would likely create a long-term threat to the hardwoods. Thus, their challenge was to consider long-term impacts to hardwoods, in spite of the fact that no immediate threat appeared to exist.

The framing group decided on a series of goals and outcomes that would be key to the success of the NSV Sustainable Landscapes Project. These goals included developing informational tools, initiating an educational outreach system, encouraging broad community involvement and, finally, composing a description of sustainable oak woodland landscapes.

Products and Outcomes

Educational Activities

During the first year, of the project, participants focused on educational and community outreach activities. As part of this work they implemented a series of regional workshops addressing how long-term urban and ex-urban development had the potential to threaten the hardwoods as well as the way of life that regional residents currently enjoy. Invitees represented a variety of interested groups, including development and real estate associations, government agencies, the Cattlemen's Association, and the Farm Bureau, along with elected officials, landowners, environmentalists, planners and others.

Information Systems

Information presented at the workshops indicated that the valley's population is expected to double by 2040. SLP participants, then, wanted to better understand this projected growth and to address sustainability within the hardwood interface by using a GIS approach. At the end of the first year, a former planner from Shasta County began to pull together population-growth information with maps illustrating possible future land uses. The study provided the basis of GIS development for this SLP (Radabaugh 1995).

A GIS coordinator at CSU Chico developed map layers depicting potential buildout based on current land use and growth projections, and overlaid them with hardwood landscape maps from CDF. Using the spatial analysis capabilities of ArcView, land use and hardwoods layers were added and statistics were generated to determine potential impact areas, sorted by land use, density, and hardwood type. During the second year of the project SLP participants worked with the GIS coordinator to add thematic layers to the

tool, including information on vernal pools, wetlands, riparian maps, and Bureau of Land Management public-land ownership maps.

The ultimate purposes of the information system were to provide planners, decision makers and the interested public with the ability to examine alternative growth scenarios and to formulate workable growth strategies for the hardwood rangelands.

Summary

The Northern Sacramento Valley SLP group ended its first phase in early 1997. A small group of dedicated people had worked hard to produce products that would be of importance to the five NSV counties in their planning and policy-making. However, at the writing of this report, the SLP participants had not expressed an interest in using the GIS tools to examine issues of sustainability. It is unclear whether this means that this group had reached an impasse because it had fulfilled its initial goals and wishes to go no further, or that participants may reconvene at some later time.

In terms of the parameters for success originally envisioned identified by CDF for the NSV project, Phase I falls within the range of outcomes predicted through the preassessment. It would be unrealistic to assume that in an area with no explicit regional governance mechanisms and limited human and financial resources the project could go much further at this time. For the time being, the tools that have been developed can be used within traditional county planning and policy venues. However, they may also, in turn, stimulate a new interest in people who view sustainability as part of their long-term interests – and thus would wish to develop a quantified view of the desired condition of hardwoods landscapes – to use the current GIS system as a planning tool throughout the Northern Sacramento Valley.

Chapter 4: Lessons Learned from the Sustainable Landscapes Projects

The overall purpose of the SLPs was to encourage a diverse group of local stakeholders to develop regionally appropriate criteria for sustainable management of oak woodland landscapes. The projects were sponsored and supported by CDF, whose intentions were largely experimental: to foster technical knowledge and tool building that would in turn support the development of regionally appropriate oak woodland conservation policies and landowner behavior.

But as a whole, the SLPs were unique compared to many other regional coordination efforts in their focus on building both knowledge bases and social capacities as precursors to policy- and decision-making. The primary objective of the present study is to draw lessons from the projects that can be applied to regional cooperation strategies elsewhere. In light of this overall goal, we examine several categories of lessons and present recommendations consistent with both the projects themselves as well as the growing literature in collaborative problem solving.

Although the two Sustainable Landscapes Projects shared several goals and objectives there are several important differences between them, which we note in the comments below. A key explanatory factor of those differences is that the second project (Northern Sacramento Valley) was initiated and conducted in light of what was learned from the first project in the Central Coast region. We explore those differences in the sections that follow.

Methods

In this study we sought to better understand both the processes and the life-histories of each of the SLPs, while at the same time asking project participants to reflect on their own perceptions of which practices were successful and which could be improved. Pursuant to these dual objectives, we interviewed more than two dozen participants and key players from the two projects. Of the total, 14 of the interviews were semi-structured; that is, we asked interviewees to respond to a common set of questions, and explored certain key issues with each of them. The remaining interviews consisted of background discussions and telephone conversations aimed at checking facts and perspectives. We selected the interviewees based on the objective degree to which each had participated in the project, in addition to following recommendations from other key stakeholders (i.e., using a standard “snowball” method).

Finally, we consulted the meeting notes, minutes and reports in order to corroborate and supplement what we had discovered through the interviews.

We also taped and had transcribed several of the interviews, telling participants that tapes and transcriptions were intended exclusively for review and analysis purposes. Most of the interviewees chose to remain anonymous, in order to speak freely; they are, therefore, cited by number only, and not name, in the text below.

Several valuable lessons emerged from the study of the projects. The two general categories of lessons we learned – Process and Roles and Substance and Outcomes – correspond with the existing literatures on collaborative problem-solving, environmental mediation and alternative dispute resolution (ADR). As we have already pointed out, the SLPs do not fit neatly into these literatures. In fact, at the risk of redundancy, we stress that the SLPs introduce a new perspective on environmental dispute *prevention*, through their emphases on collaborative development of analytical tools and collective identification of practical, applied measures of sustainability with regional specificity. With this caveat in mind, we have found some of the analytical categories of the collaborative problem-solving and ADR/EM literature useful in describing the SLP cases and their implications for regional collaborative efforts.

We discuss each lesson individually below and offer some recommendations at the end of each section. Apart from our analysis of the processes and outcomes of the SLPs, we feel the lessons learned from the SLPs can make a valuable contribution to the growing knowledge and experience in the community of stakeholders who contemplate collaborative approaches to natural resources management at the landscape or regional scale. Our recommendations, therefore, have been developed with the management and stakeholder community in mind.

A. Process and Roles

A.1. The role of sponsoring agencies as stakeholders and drivers

Frequently, the agencies or entities that fund and sponsor collaborative processes tend to drive the process, often setting parameters based on legal or mission constraints on use of funds. While it is important for all members of the group to understand this as clearly as possible, there is still a gray area between constraints that really are necessary and the use of funds or sponsorship to control the agenda.

We contend that sponsoring agencies should see themselves as stakeholders. Much of the history of public trustee agencies, since the era of Progressive Conservationism at the turn of the century, is characterized by an expectation that public trustees should be neutral experts (McConnell 1967; Hays 1982). While objectivity and fairness are legitimate goals, it has become increasingly difficult for agencies to claim occupancy of unbiased

positions from which they serve all interests equally (Sabatier 1988; Sabatier and Jenkins-Smith 1993). All public resources agencies in the US are struggling to balance their interpretations of broad public interests with their responses to pressures from direct constituencies (Wondolleck 1988; Yaffee 1994). Moreover, this balancing act is complicated by the additional imperative to maintain administrative prerogative and autonomy¹⁸ while fulfilling legislative directives and mandates (Wilson 1989; Yaffee 1994: 265; Thomas 1997a; Thomas 1997b).

As a matter of definition, the SLPs dealt with a resource at the periphery of CDF's mission. The Board of Forestry and CDF have had little motivation to regulate oak woodlands and, as we discussed in chapter one, would have had relatively weak authority to do so. Encouraging stakeholders and agencies at the local level to develop their own standards for oak woodlands management was a logical strategy from a statewide perspective, but seemed a bit curious to many local players. This fostered a constant tension in the process with regard to the presumed goals and outcomes of the project, a tension that surfaced in nearly all participant interviews. On one hand, participants said, if CDF and the Board of Forestry were planning to regulate oak woodlands, and if they wanted locals to recommend how regulations should be developed and applied locally, then the group expected CDF and/or the Board to provide some basic parameters such as timelines, biological thresholds, regulatory guidelines, etc. On the other hand, local participants were concerned that their efforts would not be of much consequence if CDF or the Board did not expect to produce or endorse regulations and policies to protect oak woodlands.

The reality is probably somewhere in the middle. In May 1993, the Board passed a resolution stating that it would not seek to promulgate regulations limiting hardwood removal. Simultaneously, the Board expressed its conviction that local governments would be best suited to that task. In September 1993, the Board sent letters to each county supervisor in the relevant counties, asking them to review both the status of oak woodlands and the policies that affect the health of oak woodlands in their county. The letter further requested that the counties recommend guidelines for zoning and land use decisions. At subsequent CC SLP meetings, participants expressed frustration that CDF representatives had not apprised them of the Board's intentions. Rather than clarifying the Board's or CDF's goals – and by extension the SLP's purposes – participants were even more confused about the relevance or anticipated consequences of their work.

Many participants in both projects found it difficult to understand CDF's intentions and felt that the agency was playing a confusing role: attempting to

¹⁸ As James Q. Wilson, one of the leading political scientists in studies of American government bureaucracies, put it: "No agency head is willing to subordinate his or her organization to a procedure that allows other agencies to define its tasks or allocate its resources" (Wilson 1989: 269).

be a sponsor and facilitator, while at the same time giving the appearance of having an unarticulated stake in the outcomes. Many interviewees initially pointed out that CDF representatives had been, on the whole, “up front” about the agency’s expectations. However, upon further probing about their perceptions of CDF’s intentions, most revealed that they had found CDF’s ultimate goals to be fairly obscure, and that they had not had a clear idea of what connection FRAP representatives were supposed to have to the ultimate policy outcomes.

We propose that the relative obscurity of CDF’s intentions was due, in part, to the experimental nature of the projects. According to some of the interviewees, CDF’s principal representatives had tended to describe their expectations in broad terms, indicating to most participants that the agency had hoped that the particulars would become clear as the group worked out principles on the regional and local levels. This tendency appeared to have had at least two kinds of impacts on those interviewed. First, absent clear guidelines and expected outcomes, the groups had felt a greater liberty to take the process in their own directions, particularly in the case of the Central Coast SLP (Interviews 1, 3, 4, 11 & 12). Secondly, when CDF’s intentions had not been made clear, the participants had tended to speculate on the agency’s intent, based on their own biases about extra-local agencies in general and CDF’s political motivations in particular (Interviews 1, 2, 3, 4, 11 & 13).

These speculations tended towards the negative. In both project regions, we found substantial background bias against state agencies. While this bias is so common it can almost be called “natural,” its expression at the subregional level reveals several important problems. The frustration and distrust that participants expressed toward CDF and the Board after their focused involvement in the SLPs was very real and cannot be dismissed as parochial grumbling. As evidenced in the interviews, most participants in both projects had anticipated there being some program implementation or policy outcome from their collaborative work that would have been wholly or in part supported by CDF and/or the Board. When that support was not forthcoming, according to interviewees, it confirmed for some their background bias that statewide agencies tend to be insensitive to local needs and conditions.

CDF’s participation in the Central Coast project appeared to have been problematic. CDF did not seem to have developed internal clarity about who was to represent the agency at the meetings. Personnel from Sacramento attended meetings only sporadically, and at times were perceived by regular participants to be disruptive and peremptory. Later discussions with FRAP representatives revealed concerns that their regular attendance might be perceived as an attempt to dominate the process, which would be at cross-purposes with their intentions to allow regional participants to develop their

own solutions. Some CC participants suggested during interviews that more active local representation from CDF might have allayed concerns that CDF lacked agreement as an agency about the relative autonomy of the process (Interviews 1, 2, 3, 6 & 10). Limited time and travel resources appeared to have prohibited regular attendance by Sacramento CDF personnel (Interview 10). Other state and federal agencies were urged to participate locally, but records show irregular attendance by such representatives.

Recommendations

1. When sponsoring agencies start to develop cooperative regional plans, they need to make sure that the processes they use match their desired outcomes. They should be clear about the expected relationships between participation and policy outcomes, and should pre-assess what kind of agency investment is appropriate to which desired outcomes. For example, if the desired outcome is information sharing among all participants, the agency may be required to provide only a minimal level of investment and coordination. If the sponsor seeks advice and consultation from the participants, however, additional resources may be required. Finally, if the agency desires a broadly based consensus upon which policy decisions can be based, then sunshine laws, equity, formal public involvement requirements, etc., may require a higher level of investment.
2. Agencies should be clear about any specific products they desire or require from the group. Moreover, agencies should be clear about any limits they are setting on the group's involvement in policy decisions or project-implementation activities.
3. Sponsoring agencies should be prepared to behave as stakeholders, and should first clarify internally whether or not they are, in fact, willing to concede power or exercise flexibility with certain authorities or prerogatives in order to achieve their desired goals.
4. Sponsoring agencies should be prepared to define and articulate for the group what will constitute group "success," especially if funding is contingent on particular outcomes.
5. Public agencies, particularly sponsoring agencies, must remain as visible and accessible as the other participants are, and should be present and available throughout the process.

A.2. The role of policy and regulation

Several years prior to the initiation of the SLP, the Board of Forestry urged regional and local organizations to find solutions to hardwood-habitat management problems (see chapter one). Most project participants expected the Board of Forestry eventually to impose regulatory sanctions in the absence of adequate local response, even though it was not quite clear what “adequate” was to mean.

The role of regulatory mechanisms in achieving desired resource outcomes was clearly a concern for most SLP participants. Participants in a consensus-building effort, where a broad representation of stakeholders is asked to make policy recommendations aimed at changing landowner behavior, will legitimately expect the policy and regulatory processes to meet them part way. Even self-regulation needs to have built-in sanctions. A number of the participants we interviewed thought that the creation of the SLPs signaled an abdication of authority on the part of the Board. One participant captured the sentiment of many others in this way: “The Board didn’t want to take the political heat for regulating oak habitat, so they handed the problem off to the locals, hoping they would fix it” (Interview 12). Consequently, flexibility and innovation at the policy-making level may be seen as a lack of political will at the local level.

During the interviews, we presented participants with a hypothetical characterization of the SLP, as follows: CDF wanted to build strong informal networks among non-governmental players, who would then influence private landowners to manage their oak woodlands more sustainably. This informal network would also become a foundation upon which constituencies could be built to support policy development at appropriate levels of government. Policy would be based primarily on incentives developed at the local level and those incentives would themselves express strong stewardship and public-trust values.

In nearly every case, the interviewees saw this characterization of the projects as perfectly plausible. Moreover, they concurred that the networking, incentives and educational efforts that accompanied the projects were essential. However, they also observed that this strategy should be complemented at some point by a policy framework that reinforced the incentives by sanctions of some kind.

San Luis Obispo County provides a useful example. After several years of debate about strategies for oak woodland conservation, county supervisors decided to make yet another attempt to develop a native tree ordinance aimed at preservation of oaks. Interviews with county staff and supervisors revealed that the SLP process had increased their confidence that sufficient knowledge and a potential constituency existed to support the renewed effort.

Some SLP members saw the county's willingness to develop a legislative solution as an appropriate complement to their efforts. Clearly, self-regulation is a preferred alternative. Confirming an underlying tenet of the IHRMP, interviewees shared a fairly firm belief that those who contribute to the pressures on oak woodlands will eventually call for sustainable management practices because of enlightened self-interest.

In almost every case, the interviewees expressed an expectation that the Board of Forestry or CDF would eventually announce a unified strategy, strengthened by local involvement and complemented by local and regional policy and regulation, for protection of oak woodland resources. Several Central Coast interviewees – who had more distance from their work together at the time of this study's interviews – remarked that they were either waiting for the Board to take action based on their regional efforts, or that they had no expectation that there would be any response from the Board. It was not clear to the participants how, when or whether the Board or CDF would acknowledge the work of the regional groups. Some expressed disillusionment with the SLP process because of the lack of response, indicating that it confirmed their suspicions that the Board was abdicating its responsibility for oak woodland resources. As one interviewee put it, "All they said was thank you . . . and told us it was a great contribution and all the other things you say to people who put in all this free time . . . [but] you know you are being politically stroked...." (Interview 2).

There was a division among the CC project interviewees between those who wanted to move forward into policy, regulation and incentives, and those who believed that the mere fact of having gotten a diverse group of people working together was a success in and of itself. Again, it had not been clear to the group either at the outset or at the conclusion what measures were to have constituted success. In short, some say the process went a long way in developing consensus definitions of sustainability in oak woodlands. Others were disappointed that it didn't go far enough.

Recommendations

1. Facilitate early discussion of relationships (real, present, hoped-for, wished-for, etc.) between the collaborative process and the formal governing institutions and policy-making processes that relate to the group's work.
2. Develop realistic expectations of the policy outcomes of the group's work.
3. Conduct on-going or periodic reviews of the group's perceptions and desires concerning linkages to formal governing processes.

4. Provide opportunities for the group to get updates on policy changes. Involve the group in assessments of policy that potentially impacts their work.

A.3. Owning the problem and the process: Adaptive governance

Engaging local interests in governance requires starting where local players are, not where others think they should be. Local groups need to be able to reframe both the definition of the problem and their approach to solving the problem, in ways that make sense to them and fit their own cultural and social realities. This is a recognized theme in the sparse literature on local involvement in resource management, and is addressed frequently in the various handbooks and guidebooks on locally based multi-stakeholder participation (Wondolleck 1988; Bidol-Padva and Stroud 1990; Yaffee 1994; Tarnow and Watt 1996).

In both SLP cases, the groups took pains to adapt the process to the political, social and ecological realities in their own region. We discuss each of them in turn below.

Central Coast SLP

In the Central Coast, the group chose to merge the technical and policy committees fairly early in the process as an expression of their sense that their missions were inseparable. The CC group's attempt to develop a locally meaningful definition of sustainability was a further indicator of their trying to "own" the process.

The Central Coast group appeared to struggle with this "ownership" problem for the duration of the project, masked, as it were, by their attempts to find practical measurements of sustainability. Some of the scientifically oriented members of the group interpreted this difficulty as a technical matter. Definitions of sustainability are elusive, no matter what the circumstances. Defining the biological or physical characteristics of a sustainable oak woodland landscape proved no different for the SLP participants. From the technical and scientific perspectives, the key to useful definitions of sustainability lay in sampling. In other words, according to some interviewees, satisfying CDF's goals was seen to be largely a matter of obtaining more and better data (Interviews 2 & 12).

The less technically oriented CC players appeared to see the problem differently. For them it was a social and political issue, essentially contingent upon the values and political will of those in positions to make policy and land-use decisions (Interviews 1, 3, 5, 6 & 7). As we discuss in greater detail below, a definition of sustainability would need to include a human scale in order to make it an intelligible resource for policy- and decision-making. It

was evident from interviews with Central Coast SLP participants that consensus on a definition of sustainability was a necessary pre-condition for a solid connection between governance and a bioregional- or landscape-scale assessment of oak woodlands.

We also questioned interviewees about the extent of local institutional capacities and their opinions on these institutions' readiness to implement decisions based on sustainable practices. Most thought that the institutional and organizational mechanisms currently in place would be inadequate to implement or enforce sustainable practices. At best, in order to move from concepts of sustainability at the landscape level to governance at the same scale, the most-needed changes in institutional capacity would be almost entirely within the realm of education. Even at the end of the CC project, the RC&D, which influences largely through landowner education, was seen to be the most plausible institution for advancing the concepts of sustainability into the policy- and decision making-processes. Therefore, most participants viewed education as the most realistic option for developing ownership of the issues.

Northern Sacramento Valley SLP

In the NSV case, despite CDF's original regional emphasis, the project group ended up employing a county-by-county approach. While it was clear to some that the larger landscape crosses county jurisdictions, the majority of participants viewed the local area's political and cultural readiness to work across county lines as minimal. Since most of the power to change landowner behavior lies in the nexus between zoning laws and traditional interests, the "real" actors are county supervisors (or in very limited cases, city councils) and their active constituents. While the socio-demographics that underpin this pattern are changing fairly rapidly in the region (Huntsinger and Fortmann 1990; Radabaugh 1995; Nelson 1997), the acceptability of implementing landscape-level governance of oak woodlands remains a distant vision (it is important to note that three of the eleven counties in California with home-rule ordinances or resolutions are in the Northern Sacramento Valley).

One NSV interviewee did not believe it would be realistic to mobilize a network of diverse, sophisticated and collaboratively-oriented actors to educate private landowners about ways to manage oak woodlands at the landscape level (Interview 12). Culturally, many area residents do not see themselves as inhabitants of a landscape defined by oak woodlands or the Sacramento River drainage. To our knowledge, systematic survey work has not been done on the social and cultural geography of the NSV, but expert opinion suggests that NSV inhabitants are more likely to identify themselves geographically by county, and are "more likely to notice when they cross a

county line” than when they drive from one ecological subregion to another (Interviews 11, 12 & 14).

The institutional context is critical in this part of the state. While many agencies in the region make decisions with trans-jurisdictional implications, there are few institutions (formal or informal) that integrate those decisions at the larger scale of their full impacts. Thus the cultural and political readiness to think and act at the landscape level (vis-à-vis oak woodlands, in this case) is minimal to non-existent. Water management and transportation are most likely to make trans-jurisdictional thinking more plausible in the NSV, given the economic and social importance of both infrastructural features. But interviewees noted that other attempts to stimulate thinking at the scale of the entire NSV have been met locally with indifference or even hostility (Interviews 11 & 12).

A final point needs to be made regarding landscape-level framing of problems and solutions. While there may be clear and objective reasons from a resource perspective to pursue a problem at its natural scale, political and social risks may be involved for certain players. In the NSV case, certain members of the group found the vocabulary and conceptual framing of the oak woodlands problem perfectly intelligible from a resource perspective, but risky from a political perspective (Interviews 12 & 14). Many successful working relationships depend on framing issues so that the wording does not alienate key local constituents. Introducing a regional perspective or suggesting trans-jurisdictional institutional solutions to critical resource problems, therefore, would threaten to put those relationships at risk and jeopardize the legitimacy of these players’ roles as neutral advisors. This may also help to explain why many public agencies in the U.S. are increasingly placing their hopes in small-scale cooperative efforts. In the short term, it reduces the political liabilities of using a regional or landscape vocabulary, while at the same time it encourages diverse stakeholders to engage in cooperative efforts. In the longer term, the implicit hope is that the aggregation of many small, cooperative efforts will have a cumulative effect at the regional scale, without resource managers having to even mention the word “bioregion.”

Recommendations

1. Encourage the group to engage in as objective a preassessment as possible to frame its own understanding of the problem, including the scale at which they plan to address it.
2. “Map” the political, social and cultural factors that may affect the group’s work, or may influence the surrounding stakeholders’ acceptance of the group’s work.

3. Analyze the gaps between jurisdictions, perceived (i.e., vernacular) boundaries and the landscape scale of the resource problem in question. This should be developed in the context of group learning, ideally using spatial analysis capabilities of GIS to capture social knowledge (see chapter one).
4. Evaluate whether there are existing institutions or quasi-institutional venues for collective deliberation that go beyond the de facto local power regime. Determine whether fostering those alternative decision-making pathways would jeopardize any ongoing relationships needed to implement the results of the group's work.
5. Encourage the group to determine for itself whether existing institutions and deliberative venues are appropriate to the scale at which they believe the resources to be at risk.

B. Substance and Outcomes

B.1. Information and technology

This section explores the use of information and technology from several angles. First, collaborative processes essentially entail the acquisition, synthesis and communication of information. Secondly, technologies are increasingly critical to each step of information usage, from acquisition to synthesis, display and reporting and, finally, communication of results.

The two SLP cases we studied differed significantly in their uses of both information and information technologies. Each project raises important questions about agency involvement in the dissemination and support of information and information technologies. In the CC case, CDF initially envisioned that the technical committee would compile existing data on the location and conditions of oak woodlands, and then use GIS to present a synthesis of what was known (at least in 1992 and 1993). Project planners retained a professor of landscape ecology at California State University, San Luis Obispo, under contract by CDF, to support that effort.

The ideal use of information would have been a three step process: In the first step, CDF-FRAP would have supplied the technical committee and the GIS expert with information resources and GIS data layers that had been compiled by the Integrated Hardwoods Range Management Program (IHRMP) and other efforts with which FRAP had been involved.¹⁹ The technical committee would then have supplemented those data layers with

¹⁹ Several reports and maps were in fact delivered to the group in the first months of the project. But for reasons we shall explore below, the group did not use them to much effect.

data at a finer granularity (e.g., <1:24,000). The GIS coordinator would have used those combined layers to create GIS- or map-based scenarios that could have been revised within a very short turn-around time. In the next phase, the technical group would have delivered several scenarios to the policy committee. Members of the policy committee would then have been able to interact with the scenarios, experimenting with changing parameters, in order to establish some minimal consensus on a) whether the data produced scenarios that they believed to be accurate and b) what information they lacked, but would need in order to make better judgments about sustainable practices in the region's oak woodlands. In the third phase, the group as a whole would have presented a series of consensual scenarios and recommendations to the larger public and to the relevant policy- and decision-making institutions. Ideally, these scenarios would have been documented so that GIS could become a useful tool over time for communities and policy-makers shaping locally viable land use and management decisions. Judging from interviews and timelines constructed by CC project participants, we found that the actual process fell somewhat short of the ideal.

It is not clear to us why, in the presence of such rich information resources, the group was apparently unable to recognize them or use them effectively. While maps and reports were widely available early in the process, they did not appear to have been particularly useful to the group. Interviewees criticized the GIS coordinator for failure to produce maps for the group. Meanwhile, the GIS coordinator reported being stymied by lack of responsiveness from CDF in requests for data sets and by the "muddled" requests from the group about what outputs it wanted GIS to produce. Furthermore, the scale of data available in GIS-compatible formats did not appear to match the scale at which the group needed to examine the issues. The many maps available to the group were not in digital form, and so would have required a laborious and time-consuming digitization process. Finally, and perhaps most critically, the group did not appear to have made the crucial distinction between producing maps and carrying out spatial analyses, making it all the more difficult for them to actually develop interactive scenarios.

We probed in some depth in all participant interviews how the use of information and GIS stimulated or advanced the group's understanding of the issues. The majority of CC participants saw GIS as a fairly weak tool. While many agreed that maps are extremely useful for establishing a collective geographic understanding of the resources, participants were not at all clear about the scales at which the maps should be produced in order to be useful. We conclude that even though landscape levels of perception may be reproduced on maps, the maps may not be useful unless users also understand landscape-level ecological dynamics. There was a good deal of argument and tension over whether the group should focus on the individual

tree, the stand, or the larger subregional scope of vegetation type (Interviews 1, 2, 3 & 7). Judging from interviews, this tension remained unresolved throughout the course of the project. Thus, most participants agreed that, until the group could establish a common scale of concern, the use of GIS technology would at best embellish, and at worst seriously misrepresent, the extent and condition of the oak woodlands. Moreover, fundamental disagreement over the conceptual underpinnings of the project (i.e., whether the group should develop thresholds vs. establish a ranking system, no net loss vs. acceptable change, etc.), likely made the use of GIS potentially threatening. Spatial representation often precipitates discussion about land use policy, and the group had already shown reluctance to appear to usurp normal land use planning powers.

The state of the art of GIS at the time of the Central Coast SLP appeared to be another critical issue. In 1992 and 1993, GIS required substantial computing infrastructure in order to produce multiple mapping layers that could then be integrated into useful maps. The GIS coordinator observed that the interactive scenario-building that CDF had originally envisioned would have been extremely time-intensive. The ability to do “real-time” scenarios on portable computers had not yet become widely available, so interaction with GIS tools during meetings was not feasible. A query about the potential results of a particular management action (even if the data were complete enough to be reliable) could take several days to process. By the time the scenario could have been revised, in many cases, the group would no longer have seen the query as relevant, which contributed to their sense of frustration with the technology and the GIS coordinator.

When we asked interviewees what might have made the difference between successful and unsuccessful use of GIS, several respondents suggested that current technologies (1996) would have fostered far more productive discussions, which indicated that many were aware of recent developments in GIS technology. But even so, the Central Coast interviewees felt that the data simply did not exist, at the proper scope and with the proper elements, for them to be able to use GIS effectively. Most of the members interviewed felt that well-applied GIS – with the right kind of data at the right scales – would have helped them to focus at a scope above the stand level. However, since they lacked both data and appropriate forms of information representation, their attempts to locate geographically the impacts on oaks tended to bog down at the stand level.

The scale issue turned out to be highly problematic for the CC project. Most of the existing GIS data on oak woodland vegetation types (in 1992-93) assumed a 40-acre minimum parcel size. This limitation frustrated those whose interests and expertise were focused at a scale somewhere between the individual tree level and the larger stand level, because it was too small a scale, or not detailed enough, to accommodate the micro-ecological values

that they considered to be at risk (Interviews 2 & 3). It was also troubling from the land-use planning perspective since intensive development at 40 acres and below appeared to be the greatest source of impact on oak woodlands at the urban interface (Interviews 1, 4, 7 & 8).

This corroborates the common observation that the scale at which geographic information is needed does not necessarily match the scale at which most data is available (Marceau, Howarth, and Gratton 1994; Young 1995; McCoy 1997). Ideally, effective integration of data at micro-, meso- and landscape-scales would help to track the cumulative impacts of micro-level management practices at the landscape level, while also helping to anticipate landscape-level policy and management impacts at the parcel and stand levels. While the “scale gap” is precisely one of the problems subregional cooperation attempts to resolve, in the Central Coast SLP, this gap remained highly problematic. Interviewees speculated that an enhanced GIS capability might have helped to bring the micro-level focus on trees and stands closer to the landscape-level focus on broader management and policy strategies.

Finally, there appeared to be a question about the group’s “readiness” to use available information. One interviewee observed that “all the good science in the world” would not resolve the many key philosophical and ideological differences within the group. As Weeks and Packard (1997: 240) noted, group trust and the existence of solid working relationships are often necessary precursors to the general acceptance of scientific information in a multi-stakeholder effort. This type of dynamic tends to develop over time, and through multiple projects undertaken by a relatively consistent group of stakeholders (Blackburn and Bruce 1995), which was not the case here.

“Whose science can we trust?” has become an increasingly common question in locally-based collaborative ventures. Sabatier (see esp. 1988) has proposed a decision-making model that addresses this problem by acknowledging that scientists often represent agency interests, even when they are being “objective.” In this model, scientists should be accepted as members of “advocacy coalitions,” groups of scientists and policy-makers whose interests are relatively transparent and subject to public scrutiny and debate. Moreover, Jenkins-Smith and Sabatier (1994) suggest that public involvement processes include mechanisms through which differing scientific positions, recognized and reviewed by advocacy coalitions, are publicly vetted. While this model is likely to be effective in explaining decision-

making processes whose ends are linked to formal policy, it is less helpful in cases where the role of scientific knowledge itself is unclear.²⁰

The problem the Central Coast participants struggled with was not so much that scientists could not agree or that they were partisan or biased in some sub rosa manner. The more important issue was that the participants could not agree on the proper *role* scientific information was to play in the larger project (Interviews 3 & 7). The distrust of GIS, in this regard, was also apparently a distrust of the *sources* of the information upon which it depended.

This distrust was exacerbated by a final pattern that is often at the heart of the tension between science and public policy. We suggest that the SLPs demonstrated the differences between those whose training and proclivities have been shaped by scientific practices, and those whose sensibilities have been formed by public service or policy-making. The technical committee on the CC was dominated by scientists whose professional habits are naturally conservative. When the facts are not known and when “consensual knowledge” (Haas 1992; Thomas 1997b) has not yet developed around an issue, scientists tend to defer critical *factual* questions to policy-makers. This habit frustrated the Central Coast SLP policy committee enormously, and, according to three interviewees, was one reason the group chose to merge the two committees. If the policy committee could not get committed answers from the technical committee, they hoped that perhaps engaging the entire group in both policy and technical discussions would bridge the gaps and produce useful answers (Interviews 3, 4 & 8).

On the other hand, the CC project scientists we interviewed were more reluctant than most to commit to certain agreements. They felt that the scientific information on which local sustainable practices would be based had not yet been sufficiently tried in the court of peer review to be a reliable basis for decision-making. Given the initially envisioned policy relevance of the group’s work, the scientists were even more reticent about making generalizations without sufficient information (Interviews 2, 3 & 7). Conversely, the policy-oriented members of the group tended to be more comfortable with making decisions and taking action with incomplete knowledge. They also tended to perceive the problems as serious enough to warrant early action, with the proviso that proper monitoring would support future adjustments in a given management strategy.

This final point was also problematic in the light of CDF’s overall intentions for the project. While the agency had not primarily intended the Central

²⁰ Sabatier has acknowledged that the Advocacy Coalition Framework model is most useful in large-scale conflicts where there is a relatively high degree of homogeneity in resource valuation. He is less sanguine about its applicability to less-controversial issues with a highly diffuse range of constituencies (Sabatier 1997).

Coast SLP to lead directly to policy or management outcomes, the framework that it had envisioned for the Central Coast group turned out to be practicable only with some degree of experimentation. When CDF did not, then, provide resources and support for management experiments on a landscape scale, some participants became frustrated. Management itself was seen to be a necessary part of the process. That, however, would have required commitment from, and incentives for, public agencies with formal management authority (especially the USFS and CDF) to participate on a sufficiently large scale to monitor landscape-level effects. As some of the private landowners who participated in the SLP observed, in order to produce the “gestalt” or constitutive stratum of the framework for sustainability, the group had concluded that some entities and ownerships would need to risk experimentation to test whether the project had addressed the right questions. Given both the mosaics of land use and the predominance of private land in oak woodlands, however, management experiments were less likely to be implemented on a sufficiently large enough scale to be useful as a landscape-level test of the SLP project’s hypotheses (Interviews 3, 5 & 9).

Recommendations

1. Groups and sponsoring agencies need to specify the types, sources and quality of data to be used in the project. This may need to involve “data mediation” where outcomes or products will significantly depend on the use of scientific data.
2. An assessment of the availability of scientific data should be conducted early in the project.
3. Where significant differences over quality and content of data exist, the process should include opportunities to reconcile and integrate contested data. This reconciliation process should be conducted as needed throughout the project.
4. Careful attention should be given to the scales of the data and the degrees to which the scale of the data is relevant to the concerns of each stakeholder.
5. Groups and sponsoring agencies must understand the technical capacities of institutions charged with gathering and manipulating the information for the project. Project success may depend importantly on early investment in leveraging existing local technical capacities to meet the data and information needs of the group.
6. Periodically throughout the process, policy and scientific stakeholders should engage in focused dialogue regarding their

differing perspectives on the role of science and scientific information in policy- and decision-making. Facilitators should have demonstrated experience in fostering effective dialogue in this area.

7. GIS should be used as a tool to engage stakeholders in collectively examining the consequences of proposed policy and management actions. Since participants unfamiliar with the concepts of spatial analysis and GIS often mistake maps for analytical tools, care should be taken to develop a common vocabulary of spatial analysis and representation among group stakeholders.
8. If the project is to include iterative and interactive group involvement in the spatial representation of policy scenarios, adequate technical support and capacity should be secured in order to facilitate productive dialogue.

B.2. Reporting and documentation

Clear and accurate reporting and documentation are of key importance to collaborative processes (Susskind and Cruikshank 1987; Carpenter and Kennedy 1988; Society of Professionals In Dispute Resolution 1997). Collaboration is dynamic and fluid. Participants' thinking changes. Perceptions of the problem itself and the interests of other players change as the process moves along.

Minutes of meetings are critical to keeping the process on track, especially when participants come and go. But perhaps more importantly, documentation of the process and a periodic assessment of areas of common agreement are often what saves a process from sliding backward and revisiting old issues once thought resolved by the group.

Several points that became apparent in the writing of the final report of the Central Coast SLP (Greenwood 1995) would apply to many other projects whose products include published findings. No formal report has been published to date by the Northern Sacramento Valley effort,²¹ but many of the same issues can be anticipated if and when such a document is prepared, as well. Through our review of both SLPs, we developed six discrete principles of documentation and group reporting.

²¹ A web site describing the project outlines several of the driving concerns, but documents very little of the actual process in which the NSV group has engaged (Nelson 1997). We knew of no sources of formal meeting minutes.

Documentation is time- and labor-intensive

Writing requires time that many participants will find they do not have. When a document is to be collaboratively written, the time required increases dramatically. Not only is there normal transaction time (i.e., the time it takes to exchange drafts and get around to working on them), but changes in text can also translate into changes in meaning and perception, requiring side negotiations among authors and with the group membership. Groups that rely heavily on volunteers are likely to require in-kind agency or private sector support to produce a document.

Writing is part of the learning and consensus-building process

Collaborative writing should be understood as part of the learning process. Too often it is assumed that when the writing begins, the key issues have been largely resolved or that the group generally accepts the assumptions and premises of the project. However, the writing itself is frequently a critical part of the learning process. One approach, recommended by Susskind and Cruikshank (1987), uses what they call a “single text document” as a vehicle for creating ongoing consensus. This process calls for stakeholders to develop discrete statements regarding areas of agreement that become part of an evolving text or document throughout a process. Groups may later compile the smaller statements into a larger document representing the group’s consensus.

A report can indicate degrees of consensus

A group should understand the difference between collaborative, consensual, and representative reports. In the CC case, an initial document was prepared by one of the stakeholders in anticipation of forwarding a “final report” to CDF. That report’s author and several participants suggested in interviews that the document was a close representation of the project’s chronology and process, and thought it was true to the historical details of the project. However, as this draft report was circulated, it became apparent that the report did not reflect the actual level of *consensus* within the group. Although many issues had been brought to conclusion through a series of meetings, and those conclusions had been accurately documented in minutes and correspondence, the perceived political and policy context of the draft report caused the group to revisit the degree to which it was, in fact, in concurrence on certain key issues. Thus group consensus is not the mere accumulation of agreements over time. Particularly in relation to a published document, group members will scrutinize any claims of consensus in light of its potential impacts on outside players and policy-makers.

The process of writing the final report appears to have shown the CC group areas that they could actually agree upon. In retrospect, several participants

agreed that the final draft of the report represented the “lowest common denominator,” the narrowest common ground upon which the majority of the group still involved could agree. Others criticized the report as “thin” and “incomplete”. However, upon probing the reasons for the apparent weaknesses, interviewees revealed that the group felt it was more important to document what they could agree upon than it was to “push the envelope” of what was known about protecting oak woodlands. Some members’ desire to risk controversy and advocacy apparently deferred to the general desire to fairly represent the group’s common ground.

The Northern Sacramento Sustainable Landscapes Project, on the other hand, provided a series of products (Radabaugh 1995, Nelson 1997). A final report did not seem appropriate, and would likely have detracted from the accomplishments of the group. Group members appeared to have accepted the products without contesting their accuracy. This is likely due to a much more limited set of expectations on CDF’s part, and a less ambitious set of goals regarding measures of sustainability on the group’s part. To date, the products have been used by several county planning staffs to enrich their land capability evaluations particularly with regard to sensitive riparian areas.

Final reports require investment of resources

Especially when a process is limited by definition, participants may find it difficult to set aside the time and resources it takes to document the group’s process and findings. Many participants in the CC SLP understood that the project had a finite timeline and limited resources, and for some these became disincentives to put much energy into the final report.

At least two of the authors of the final version reported making a conscious trade-off between writing a report that might have more future impact, on the one hand, and bringing the project to a satisfactory close without a disproportionate investment of time and personal energy. It was finally decided to minimize further investment in writing the final report because of uncertainties about overall purpose, audience and potential impacts (Interviews 2, 4, 7 & 13).

Finality, closure and milestones

A final report should not be mistaken for a final result. The report will often have a tone of finality, even if the authors’ intentions are to merely note where substantial agreement has been found. Reports are often intended to be milestones, markers along the path that, in retrospect, may have more coherence than either the participants or the authors can see at the time they are documenting their experiences. Moreover, the writing of a report can often give a false sense of structure and closure to processes that have otherwise meandered or produced inconclusive results.

Agreement on purposes and audience

A final report can be frustrating to many of the group's members and the authors when the group has not clearly defined the report's audience and purposes. Often the writing of a final report becomes the occasion for a narrow interest to assert its position with more force than it had exhibited during the deliberative process. Unless the group has clearly understood its purposes, a report can remain vulnerable to misrepresentation and "hijacking" in the service of specific interests.

One of the reported difficulties encountered in the writing of the first draft of the CC report was lack of clarity of purpose. One of the stakeholders in the process had been retained to author the first draft. When the draft was submitted to the group, many members expressed substantial and acrimonious disagreement, threatening to stymie the closure of the project. The author argued that the draft reflected the group's actual process over two years and accurately captured its common concerns and recommendations. Others rather vehemently disagreed and took exception to both the approach and content of the draft, calling it "biased" and "self-serving."

The group agreed to re-author the report collaboratively, dividing chapters among core participants and circulating drafts of each section as they were in preparation. While the latter process required a substantially greater investment of time, energy and expense, the group was apparently more satisfied with the results. Authors of the second draft whom we interviewed agreed that one critical problem contributing to the unsatisfactory nature of the first draft was that the group had failed to explicitly agree on the report's intended audience and purpose. Some believed they were writing the report for the Board of Forestry, providing the Board with a consensus report (and therefore policy document) on how oak woodlands should be managed in the Central Coast region. Others understood their purpose as documenting a process, leaving conclusions about substance and process to interested readers. Still others appeared to see the document as a guidebook for those interested in voluntary oak woodland management in different regions. Each of these perceptions about audience and purpose implied a different product. However, it is quite possible that questions about audience and purpose could not have been resolved entirely prior to drafting the report, supporting the conclusion that documentation itself is a part of the deliberation and learning processes.

Recommendations

1. Clarify the purposes and audience of the report or product.
2. Facilitate iterative writing and reporting processes that engage key members of the group; ensure that writing is collaborative

to the extent possible to reduce the vulnerability of bias or “hijacking”.

3. Provide technological support and training, where necessary, to facilitate ease of information exchange, e.g., through use of the World Wide Web and interactive web pages, e-mail, etc.
4. Ensure that sufficient resources are in place to bring the documentation process to a conclusion that satisfies all stakeholders, at least regarding the fairness of the process, if not the substance.

B.3. Continuity and follow-through

It is logical that after investing so much time and energy in a project, group members will want to experience adequate follow-through and closure. In the case of the CC, it was clear from interviews that participants were not entirely satisfied with the follow-through provided by merging their efforts into the Central Coast RC&D. While the RC&D's workplan for the years following the CC Sustainable Landscapes Project reflects some of the ideas and values developed by the SLP group, some of the original SLP players (e.g., Interviews 2, 7 & 10) found that the RC&D plan (Central Coast Resource Conservation and Development District 1996) did not promise to meet their needs to their satisfaction.

Although the values of the SLP are reflected in the commitment of the RC&D to continued educational programs, the plan makes no specific mention of either oak woodland or hardwood management. Interviewees were not clear whether agreements had been made to integrate Phase II of the SLP process into the RC&D Area Plan, and some of the SLP participants seem to have expected the RC&D plan to have included some continued application of SLP management principles. However, spontaneous (i.e., unprompted) discussion of the future role of the RC&D in interviews indicated some concern, if not outright frustration, with the outcome. In this regard, it is quite possible that the RC&D had become a surrogate for CDF and the Board of Forestry in the eyes of several project members. One might well speculate that those participants who wanted the SLP process to result in advocacy would likely be frustrated with the RC&D's apparently weakened strategy, especially following their failed expectations for follow-up policies from the Board of Forestry.

At the time of this writing, the NSV group was still working with this issue, and it would be premature to make any judgments about follow-through. It was clear, however, in discussing future prospects with NSV participants that they expect the follow-through to include CDF's participation in completing the

GIS layers for the five-county area, along with some assistance in distributing the results of their analyses to local planning agencies (Interview 11).

In the CC case, the group had understood the work it had done prior to finishing its report to be “Phase I.” Clearly there was a collectively held expectation that there would be a “Phase II.” While the exact elements of Phase II were never made entirely clear, in either the group’s documents or our interviews, the implementation of a “walkabout” was to be one of its prominent features. In brief terms, the concept of a walkabout arose when several of the group’s key participants concluded that meetings and reports would not produce the knowledge, understanding and agreement on measures of sustainability that they had sought. They agreed that the best way to understand a resource issue was to “go stand on the problem” and talk about it (Interview 5). But beyond just on-site discussion, the group felt it was important to document the objects of their discussion, as much as possible, through “expert narrative” (Veisze 1996). Their plan was to record in as much detail as possible a kind of “living record” of their discussions, and to do so in such a way that an eventual time-series comparison might be done by returning the same people to the same sites and reviewing the condition of the resource.

The walkabout was to be a field test of the measures of sustainability developed by the group and published (at least in part) in the group’s final report. As of this writing, one walkabout had taken place, in October 1996. Follow-up interviews showed that participants were hopeful about using video technology and GIS to document what Lipschutz (1996) has called “social knowledge” (see chapter one) as part of the group’s description of sustainable practices.

From another perspective, CDF, as the sponsor of the projects, expressed some interest throughout the process in continuity beyond the initial phase of its investments. Agency representatives expressed their own frustrations about the group’s lack of follow-through, indicating a hope that the group would find its work together useful enough to continue investing resources from other sources into the process (Interviews 3 & 10). CDF’s hope had been that, in the words of one interviewee, the group would “take on a life of its own.” But neither the group nor particular individuals has the resources to continue the work. Additional resources were not available to sustain the Central Coast group, and as a consequence, the group now considers its work to be at an end, although certainly not complete.

In the Northern Sacramento Valley, CDF continues to invest resources in GIS data development and is supporting the dissemination of GIS-based information to city and county planners. While it is not clear what investment strategy CDF is willing to pursue, the evidence suggests that products such as CD-ROMs and GIS data layers can more tangibly justify future investment

by some public agencies than can the education of potentially active citizens. This problem reflects an emergent consideration of the experiment: Can public agencies successfully justify investments in “intangible” resources such as human and social capital and regional capacity in order to foster policy outcomes in alignment with their mandates and missions?

Many interviewees observed that the Central Coast group still had unrealized potential for continued self-education and involvement; indeed many of the group have continued to work on the issue through other venues. The NSV participants, however, have effectively dissolved as a group, although a small cadre of interested agency people and academics continues to develop analytical tools and data resources for local planning efforts.

We must include a caveat here about the unpredictable nature of these kinds of processes. No one can accurately foresee the eventual trajectory of a process, particularly as the collective learning curve of a group rises and the interconnected nature of its members’ concerns becomes more apparent. Often a group will redefine the nature of its original problem or change the scope of its concerns as it learns more about the issues (Bingham 1986; Wondolleck 1988; Yaffee 1994: 329-340; Burgess and Burgess 1995). In the case of the Central Coast SLP, some participants reported an increased understanding of the social, cultural and political dimensions of the oak woodlands sustainability question, and concluded that the human dimensions were likely to be most important in developing sustainable strategies. Two participants in particular insisted that the continued focus on the biological issues would miss the more critical and immediate socioeconomic and political causes of the impacts on oak woodlands (Interviews 2 & 5), even though others considered the biological knowledge central to the group’s work.

Recommendations

1. Stakeholders and sponsors should address early the need for continued resources if a project is expected to sustain itself locally.
2. It is important to differentiate between the specific life history of a group or organization, and the total impact of the involved individuals on multiple regional issues.
3. It may be useful to assess the need to have an institutional basis for continuity. In some cases, institutional structures put in place for a particular purpose may become obsolete or inappropriate. They may eventually evolve into institutional components of subsequent efforts involving many of the same individuals (see “B.5. Building subregional capacity,” below).

B. 4. Sustainability and scale

The CC group was clearly frustrated by attempts to develop actual, practicable measures of sustainability. The group was stymied by the inherent conservatism of the science that would support such measurements. But more importantly, measuring an abstraction such as long-term sustainability in an environment with potentially countless variables ultimately proved an insurmountable task for the group. Many have asked whether one could accomplish such a task even if one did have all the information one thought was necessary. The dynamics involved may be too complex for a definition of sustainability to be couched primarily in scientific terms (Lele and Norgaard 1996).

Historically, lack of information and insufficient philosophical power has not stopped efforts to imagine and implement long-term visions of landscapes or of human interactions with land and resources. One only need observe the relatively recent history of our romance with the idea of wilderness to understand that “forever” may be negotiable and that pristine nature and human interventions are inseparable (Nash 1982; Snyder 1990; Oelschlaeger 1991). More dynamic and nuanced appreciations of ecological and social change are increasingly called for in order for us to understand and correct our course towards ecological “balance” or at least dynamic equilibrium (Anderson 1987; Botkin 1990; Blackburn and Anderson 1993; Grumbine 1994).

The Central Coast SLP, in the aggregate view, appears almost heroic in its attempt to link the pragmatics of management practices and scientific measurement with the abstractions of sustainability. Particularly revealing was the participants’ eventual agreement that the walkabout, a narrative and qualitative test of their proposed measurements, would be the only feasible way to know whether they were on the right track. Hence, the walkabout (a name not accidentally resonant with the aboriginal Australian rite of passage) was to have been a practical means by which scientific measurements would have been integrated with collective deliberation over the meaning of sustainability. Discussions in the field were to have provided a layer of “social knowledge” (Lipschutz 1996: chapter seven) and “thick description” (Geertz 1973: 5-6) to the project. A video record of the walkabout was to have enabled future comparisons with both observed resource conditions and the quality of the interaction between scientific knowledge and “expert narrative” (Veisze 1996). The ultimate management and policy impacts of this kind of “thick” information system are still unknown. It is probably unrealistic to expect to find causal relationships. What is important to note about the project in this regard was the connection made by the group between sustainable practices and policies on the one hand, and on-going, deliberative social interactions on the other. In short, they discovered that

one cannot talk sensibly about sustainability without the broadly based participation of affected stakeholders.

It was clear from interviews that members of both projects wanted pragmatic management outcomes, coupled with extensive monitoring to test the viability of their findings.²² Both groups appeared to call for implementation of some deliberate change on a sufficiently large scale. The most pragmatic means for compelling those changes appeared to be the right combination of incentives and disincentives to effect change in landowner behavior. (Again, the paradox of regulating without regulation reappears.) As two of the interviewees noted, even with effective regulatory enforcement, current regulatory and institutional structures may prove inadequate to testing sustainable oak woodland management practices at the landscape level without improved inter-agency and regional coordination (Interviews 7 & 10). Indeed, it has often been a series of disconnected and uncoordinated regulatory actions that have contributed to the fragmentation of the landscape in the first place (Interviews 1, 4, 7 & 12).²³

Recommendations

1. Preassess project stakeholders' understanding of landscape and sustainability concepts. Ensure that stakeholders are able to make explicit their assumptions about large-scale systems and their relationship to the practical and local scales at which they typically work.
2. Establish collective working definitions of sustainability to be revisited throughout the project. Track changes in definitions as the group evolves, and ensure that practical, local consequences of those definitions are discussed at appropriate intervals.
3. Throughout the collaborative effort, attempts should be made to legitimate "social knowledge" and local narratives as sources of valuable information for the entire group.

B.5. Building subregional capacity

We refer to the subregion as a scale of activity and perception somewhere between the county and the bioregion. Given the increasing emphasis in California's natural resource management environment on the bioregional approach to landscape management (California Biodiversity Council 1991), it

²² See Gunderson et al. (1995: chapters 2–3) on various dynamics of "adaptive management." While monitoring is a prominent feature, an adequate model must also take into account the social processes by which the monitoring program is designed and implemented. .

²³ See also Landis et. al. (1995).

often appears necessary to identify a meso-scale at which local stakeholders actually think and behave.²⁴ We use the term subregional here to indicate that the scale of concern and focus of planning exercises for the projects were larger than county or other jurisdictional scales, but did not encompass either the Central Coast or the Northern Sacramento Valley bioregions in their entirety.

The SLPs sought to develop collective capacities on a subregional scale. By “capacity,” we refer to the mosaic of human and technological resources that can be brought to bear on regional problems and concerns. We rely on the notion of capacity from the disciplines of rural sociology, political science and community economic development (Putnam, Leonardi, and Nanetti 1993; Flora and Flora 1993; Kusel 1996b). In this literature, capacity refers to the combined effects of human, fiscal and social capital. The SLPs attempted to invest in human capital by educating individuals about the ecological and social values at stake in oak woodland landscapes. They indirectly invested in social capital by fostering deliberative processes and encouraging “networks of reciprocity and exchange” (Putnam, Leonardi, and Nanetti 1993: 167) among diverse stakeholders in the region.²⁵ And finally, they invested in institutional capacity by providing technical and fiscal resources to local institutions in order to build analytical tools and increase institutional knowledge of ecological and social values.

One way to measure the level of regional capacity is to trace through the multiple pathways that ideas and participants follow after direct participation in a group process. While the SLPs may have come to a close as finite projects, their participants have gone on to other efforts, taking with them the procedural experience and substantive knowledge of the projects. In each of the interviews, we asked participants about the “spin-off” effects of their SLP. Each interviewee reported finding direct references by non-participants in the region to the SLPs’ oak woodlands work in other processes dealing with resource management issues. CC interviewees often made connections between the SLP and new hardwood management efforts underway in the region (Interviews 1, 4, 5 & 6).

A salient example is San Luis Obispo County’s current effort to develop a native tree ordinance. In September 1996, County Supervisors appointed a Technical Advisory Committee (TAC) to develop standards and guidelines for

²⁴ A good example of this is recent effort to support bioregional approaches to resolving forestry-related disputes in the Klamath province of Northern California. Within a few months of the effort to involve local stakeholders in regional decision-making, the stakeholders themselves divided the province into four subregions. One of the chief criteria was how far one had to drive to get to meetings (Lipschutz 1996; Thomas 1997a).

²⁵ Putnam, et al. (1993) refer to social capital as it interacts with community processes, wherein the same actors have multiple social roles and made decisions based on a complex balance of private and social goods. We are suggesting a broader understanding of “exchange” that includes obligations and responsibilities to a network of diverse actors at a more regional scale.

the ordinance. Four out of thirteen TAC members are former SLP participants. While this would not be at all surprising to those at the local level (i.e., some of the appointees were perfectly obvious choices), it supports the hypothesis that existing social networks are often critical to the development of effective policy. The saga of native tree ordinances in San Luis Obispo County has been a long and dramatic one, and many of the stakeholders in the SLP are also long-time players in that process (Interviews 3, 6 & 7). Indeed, selection of stakeholders for the SLP on the Central Coast was based in part on the existing expertise and historical involvement of key conservation-oriented actors in the region (Interviews 3 & 10). Thus the SLPs themselves may be seen as another episode in the evolution of subregional capacity vis-à-vis hardwood resource management.

Finally, the SLP experiences suggest another perspective on the dual problem of scales of governance and landscape. Involving local interests in resource policy- and decision-making without succumbing to “local capture” has long been a concern in public policy (McConnell 1967; Kaufman 1967; Sabatier 1975). More recently, as decision-making powers have begun to devolve to local and regional levels in the United States, many agencies, elected officials and broader interest groups are raising questions about the readiness and willingness of local and regional actors and institutions to integrate as many of their concerns as possible at more appropriate scales (Jensen, Torn, and Harte 1993; Yaffee 1994; McCloskey 1996; Wondolleck, Manring, and Crowfoot 1996). A key concern has been how to create decision-making structures and governing institutions that more closely fit the scale of landscape-level problems.

The SLPs sought to establish a more appropriate balance among governing institutions and elements of civil society by focusing on the human, social and technical capacities within each region, and not exclusively on a project’s institutional or regulatory outcomes. While local jurisdictions may compete with one another and resist regional integration, social knowledge of the regional scale at which ecosystems and landscapes occur creates a demand within civil society for increased cooperation. As we discussed in chapter one (Trend 4), along with increased knowledge of ecological linkages at the landscape and regional scales comes a demand for institutional responses at that same scale.

The logic of interdependence creates a tension for agencies and stakeholders whose values and rewards are based on prerogative and autonomy (Thomas 1997a: chapter two). Rather than confront that tension head-on by attempting to restructure institutions, the SLPs focused on enhancing, educating and strengthening civil society’s role in governance. One of their purposes was to foster incrementally greater demand on the part of stakeholders for cooperation at a scale appropriate to the management of oak woodlands as ecosystems. It must be emphasized that this was not

some conscious conspiracy to organize the non-governmental sector and subvert institutions with resource management authority. It was more properly an experiment in developing complementary technical and social components of the governance process, with the goal of encouraging and enforcing sustainable management practices in California's oak woodlands.

Recommendations

1. Sponsoring agencies should consider whether they consider building subregional capacity by investing in human and social capital a legitimate and justifiable use of resources.
2. A preassessment of civil institutions and regional histories of civic engagement should illuminate existing opportunities for successful collaboration.
3. Sponsoring agencies should evaluate the relative "fit" between the capacities of regional institutions (e.g., universities, regional planning organizations, private sector regional partnerships and coalitions, etc.) and the expected outcomes of the project on a regional scale.

Conclusions

The Sustainable Landscapes Projects represent experiments in capacity-building at the regional scale. While their linkages to formal governing processes were deliberately weak, CDF hoped that the impact of increased capacity would result in regionally based demand for appropriate incentives and regulatory action. The SLPs were neither grandiose in their goals nor aggressive in their processes. Rather, taken in the broadest view, the SLPs sought quietly to inform and influence – based more in science than on politics – the course of decision-making concerning management of oak woodlands.

CDF sought a new tack as an agency in these processes: lead without leading; educate without dominating; support without creating dependency. The principal tool in this experiment was information. The stakeholders in each project were brought together in the hopes that building their own analytical tools would establish ownership of both the process and the outcomes. The net results of the SLPs are better tools and increased social capital. We conclude that the interaction of these results will increase the potential for establishing sustainable management practices in oak woodlands at the landscape scale.

Appendix A: A Model for Regional Collaboration and Analytical Tool Development

In this appendix, we propose a four-stage model to help understand the factors that contribute to a successful blending of local knowledge, state-sponsored education and research, and appropriate scales of decision-making authority. While the model has been developed largely through reflection on the Sustainable Landscapes Projects, we believe all four phases are applicable to other large-scale planning and management efforts as well.

The first two phases involve assessing the problem and determining the relative ripeness of the issues for collaborative resolution. The third phase is specific to the adaptive process of simultaneously developing and applying analytical tools through broad-based participation. The fourth phase involves developing linkages beyond the process, should be considered a key part of any collaborative approach to regional capacity building.

Phase I: Preassessment and Context Analysis

This phase identifies constraints, possibilities and resources. The purpose of the preassessment and context analysis phase of the model is to provide the sponsoring agency with a broad range of information that can be used to identify the parameters of both the problem to be solved and the possible range of outcomes. Moreover, it can also help to identify potential participants, sponsoring agency goals, and measures of project success.

The preassessment and context analysis is best conducted by a neutral party. Information may be gathered through a combination of personal interviews and research using local information sources. This phase is often valuable for at least two additional reasons beyond its information-gathering purposes. First, the analysis helps establish the groundwork for future cooperative work among key stakeholders by asking them to evaluate the potential effectiveness of a cooperative approach. Second, the preassessment often begins the process of problem identification and framing well in advance of a more formal problem statement, identifying key sensitive issues without necessarily setting up positions among stakeholders.

Key Questions Considered in the Context Analysis

The context of a cooperative process often remains obscure to many sponsors and stakeholders. Yet it can ultimately shape the outcome of the process. We suggest that the purpose of a preassessment and context analysis is to discover the “gestalt,” or the bigger picture within which the proposed process is to take place.

Below we briefly identify key areas of inquiry and propose some questions that can be used to guide the preassessment and contextual analysis.

Perceptions of the Problem

In order for the sponsoring agency to achieve meaningful results from a collaborative regional project, it must first be sure that it has clearly defined and understood the problem. Moreover, regional stakeholders must also believe that a problem exists and that it warrants attention. If regional agencies and other stakeholders do, in fact, perceive that there is a problem, it is next important to determine which organizations have defined the problem, and which local groups or agencies are addressing or have addressed it. It is also important to determine whether other efforts can be enhanced by or incorporated into the sponsoring agency's project.

- Do various stakeholders hold similar or dissimilar views of the problem?
- How and why have perceptions of the problem changed recently?
- Are regional stakeholders open to considering the problem in new ways?

Policies and Legal Precedents

To the extent that policies and regulations related to the problem currently exist at the federal, state and local levels, they will provide a framework for further examination of the problem. Ongoing development of other policies may also affect a project that spans several years. The project, in turn, may have significant effects on the development of other policies and regulations. Thus it is important to be aware of current and pending policies and regulations that may potentially shape the problem or be affected by the project's outcome. At the same time, it is also important to understand how the project fits within the sponsoring agency's broader policy agendas, as well as the degree to which the project is or might become a focus of major policy negotiations at any level.

Human Capacity and Resources

While a sponsor may have the desire to stimulate a local cooperative effort for the benefit of both the sponsor and the local participants, the project's progress and success will depend upon the extent to which local human resources can address the problem, particularly if it is primarily a volunteer effort. Many highly dedicated individuals in local groups and agencies often devote limited personal resources to a broad assortment of problems at the

local level. They are constantly choosing where to spend their limited time and energies. The availability of human resources, participants' perspectives, and the interrelationships among those dealing with similar problems will define some of the potential outcomes of the project. It is necessary to explore the human resources in the region and the extent to which stakeholders are willing to make the collaborative project a priority effort.

Institutional Capacity

Successful cooperative efforts need to harness resources from a number of institutions in the region. During the preassessment phase, it is important to explore what types of institutional capacities exist in the region, including the resources available through universities and colleges.

- Has publicly- or privately-sponsored research investigated the problem?
- Which agencies are addressing this or similar problems in the region and which have jurisdictional authority within the "problem-shed."
- Is there a strong history of interagency cooperation that can be tapped and enhanced through the project? Do stakeholders identify various examples of interagency cooperation as successes or failures?

Informational Capacity

Increasingly, successful collaborations on land use, natural resource and environmental projects are depending on the ability to create and harness sophisticated information resources. In a large-scale project, it is crucial to determine what resources will be available through local and regional institutions and to what extent the project can help develop them. For example, it is important to know what scientific studies related to the problem have been conducted in the region, what data has been developed as a consequence, and whether key stakeholders are familiar with the studies. It is also necessary to determine the installed capacity of information technologies among the potential stakeholders. Further one should evaluate the communication technologies in use by potential stakeholders, as well as the skill levels of technical support personnel who could potentially be assigned to the project. Most importantly, it is necessary to know what linkages exist between local information systems, regional or statewide information systems and users of those information systems at the project level. The sponsor will also need to understand to what degree local, anecdotal information (or "social knowledge") is documented, by whom and in

what forms. Finally, the sponsoring agency should consider to what degree it wishes to invest in local or regional information capacities as part of the project.

Agency Position and Orientation

While the intentions of those representing the agency may be good, how the region's residents perceive the agency will have a significant impact on whether local stakeholders are willing to work on a problem with the agency. Thus, the sponsoring agency must expend some effort on understanding how it is perceived within the "problem-shed."

- Is there a history of trust between local agency representatives and local constituents?
- Do stakeholders accept the legitimacy of the local agency representatives, but distrust the agency in general? Or vice-versa?
- How do local stakeholders "read" the sponsoring agency's intentions to initiate a collaborative process?

It is important that stakeholders at all levels perceive the problem and policies being addressed as logical extensions of the agency's goals. Thus the sponsoring agency must determine how the project will relate to its overall policies, and whether there are clear linkages between the proposed local effort and the agency's policy-making functions.

Initial Stakeholder Analysis

In all cooperative efforts, it is essential to determine who should be invited to participate in the process. It is important to keep in mind that other stakeholders will be identified through the subsequent framing process (phase II). Also, at this point the stakeholder analysis should be viewed as an *initial* -- as opposed to a *final* -- understanding of stakeholders' perceptions of the problem and their interests affected by the problem.

The first step is to understand what interests may be advanced or disadvantaged by the project. The second step is to identify which institutions' participation is needed to solve the problem, as well as which institutions may be affected by any potential outcomes.

- What types of activities have been occurring at the local level related to this problem? Have they had an institutional base? Have they been driven by local interests outside of the agencies/institutions that normally respond to the problem?

- Have elected officials been involved? What constituencies do they feel are affected by the problem?
- Are the interested parties willing to come to an initial meeting to discuss and help frame the problem? Do they know of others who should be involved in the initial discussions?

Internal Agency Analysis

The sponsoring agency is now in a position to form a “gestalt” view of the problem, the key players and the attitudes in the region. However the agency must also engage in an internal analysis that will provide it with a realistic assessment of how it is willing to approach the problem.

Sponsoring Agency Goals

Clarity about the purpose and goals of the project within the agency is crucial for achieving project success. All agency representatives working on the project must have a clear understanding of the project problem, the available resources, the agency’s goals, and its expected outcomes and products.

Clear communication is the key to establishing trust between the sponsoring agency and other project participants. *Which* goals and expectations are communicated to potential stakeholders, as well as *how* these goals and expectations are communicated, have a significant impact on the relationships that will evolve between participants and agency representatives. The agency needs to clarify and articulate internally both its short-term and long-term project goals, and to understand how these goals fit into the agency’s larger political and policy framework. Moreover, the agency must commit itself to communicating promptly to participants any changes in its goals and internal policies that may potentially affect the project.

Expected Outcomes and Measures of Success

Collaborative approaches, especially ones that reach beyond existing jurisdictional boundaries and leverage multiple authorities, are time- and labor-intensive. Those who propose a collaborative approach generally make a calculation of its potential costs and benefits. A critical issue is how they make that calculation, and what benefits they have in mind when contemplating a collaborative approach. Moreover, a preassessment should clarify which alternatives to collaboration were entertained, how they measured up when compared to a collaborative strategy, and what values may have informed the decision to use a collaborative approach.

Finally, it is important to identify the degrees of agreement, disagreement or misperception about anticipated outcomes that exist among the key initial

actors. It is not at all unusual for initial actors to have different goals, assumptions, expectations and interests at the beginning of a process, some of which are often unarticulated. Two parameters are important to identify here: constraints and negotiable issues. Constraints are perceptions of the “givens” of a situation (e.g., threatened and endangered species, legal limits of authority, ecological issues, etc.), and negotiable issues are the limits initially put on the problem that affect the eventual “solution space” (e.g. boundary conditions, jurisdictional limits of the problem, dominant values, etc.) (Fisher and Ury 1981; Susskind and Cruikshank 1987; Carpenter and Kennedy 1988; Bidol-Padva and Stroud 1990; Tarnow and Watt 1996).

For several important reasons, it may be difficult to elicit clear answers to the above preassessment questions. Stakeholders may not be forthcoming about anticipated outcomes because of calculations they have made about the costs of premature revelation of intentions. Stakeholders may not have conducted an adequate analysis of the decision and solution space and therefore cannot clearly anticipate outcomes. Most collaborative processes begin with a crisis. But a crisis may over determine the range of anticipated outcomes at the beginning of a process. If, for example, the crisis is focused on an endangered species listing, key actors may focus excessively on recovery programs and may not be open to other options. Public agency representatives are often constrained by programmatic limitations. For example, administrators may wish to contribute substantially to a collaborative process, but in order to justify their involvement, they may have to “stretch” the rules of a particular program to meet the needs of the process. Articulating their strategy may put the project at risk.

Ultimately, the preassessment should project a range of possible outcomes and measures of success. In its internal analysis the agency must consider which of its interests and goals can be met within the range of possibilities.

- Is there sufficient potential to meet the needs of the sponsoring agency through collaboration? Can these interests and needs be more effectively met in another way?
- Is the agency committed to making clear its range of expectations to the participants?
- Can the group meet these expectations and still have the freedom to re-frame the problem and produce solutions that are meaningful?
- Is the agency willing to accept outcomes beyond its control?
- Assuming that the agency believes it is worthwhile to proceed, has it clearly identified a means of administrative or

organizational support to realistically support the process throughout its duration?

Phase II: Framing Processes

Once the agency has completed the preassessment and context analysis phase, and has decided that its goals and needs can be met through a collaborative process, the next step is to undertake a collaborative framing process. This usually involves a series of meetings that bring potential stakeholders together with key representatives of the sponsoring agency. As in the preassessment phase, the framing group must develop consensus on whether a problem exists, the nature of the problem, and whether the problem merits a locally- or regionally-based collaborative effort. In this phase, a sponsoring agency often contemplates a dual role for itself: that of project convener as well as a stakeholder. If the agency opts to play a dual role, agency representatives should be clear about when they are playing which role.

Assuming that the participants involved in the framing session agree on the nature of the problem, the group can then begin to identify short- and long-term goals for the project, as well as the resources the participants believe should be engaged. The most critical issue the framing group must address is whether there are stakeholders – beyond those participating in the framing process – who should be involved in the project.

- How does the range of affected compare with the range of represented interests?
- Is there a balance of perspectives among the stakeholders?
- Who are the information and power gatekeepers? Are they informed and involved?
- Has the group identified knowledgeable people at the local level who can help ensure that the process will remain sensitive to the local concerns identified?
- If there are reticent parties whose interests will be affected by the project, is there some way to make sure that their interests and ideas are reflected in the work of the group?
- How will the group communicate with others who might be interested in or affected by the project but who cannot attend the meetings?
- Is the size of the group manageable?

By the end of the framing process, all of the parties should clearly understand the following:

- their initial goals, roles, expectations and measures of success;
- which key stakeholder groups and interests should be represented;
- potential resources; and
- the parameters of both the problem and project.

These form the framework for the ongoing work of the project and the basis by which sponsors and participants will be able judge whether they have achieved satisfactory results.

Phase III: Collaborative Tool Development

The key innovation of the Sustainable Landscapes Projects was simultaneously to develop and apply analytical tools through a broadly-based participatory process. While a straightforward collaborative problem-solving model is sufficient for many types of planning and policy projects, the Sustainable Landscapes Projects attempted to address a need that has become much more common in the past several years. As GIS and other spatial analysis tools are increasingly used in land use and environmental decision-making, the question of how to incorporate their development and use into participatory processes has created an unusual challenge. We have discussed many of these challenges in the body of this report.

At the heart of this model is an adaptive process that includes: statement of hypotheses; tool selection or development; testing of hypotheses; and tool evaluation and adaptation. In the Sustainable Landscapes Projects, this involved presenting a measure or criterion of sustainability in oak woodlands, a policy proposal or an analytical model to the larger group. This was followed by extensive, facilitated discussion among all participants, including discussion of policy ramifications. The discussion provided an opportunity for mutual education among the participants. Outside experts were asked to provide feedback on the ideas presented. Finally, analytical tools such as GIS layers, satellite imagery, research data, or statistical information were integrated into the discussion.

Based on these interchanges, the group then considered new possibilities that evolved from the original discussions, or worked on refining the hypotheses that had been proposed. At this point, the group identified a series of criteria to determine which options were the most suitable, based upon their selected criteria. As a final step, the group applied the criteria to the options in order to validate one or more of the choices. If this procedure

did not produce a satisfactory final outcome, the group repeated the steps, starting with a new measure, policy or model.

The use of tools such as GIS, satellite imagery and remote sensing must often evolve alongside the collaborative problem-solving process itself. Ideally, through each iteration described above, the analytical tools themselves evolve as they interface with the dynamic process of the group. In the end, development of these tools should be one of the outputs of the process.

Phase IV: Linkages to Policy-making and Decision-making Processes Beyond the Project

One measure of success for long-term natural-resources planning projects is the degree to which they meet the needs and interests that the sponsoring agency and the local stakeholders have identified for themselves through their framing processes. Ultimately, however, the greatest value of these projects will be in the degree to which they inform and enable the long-term development of natural resource policies throughout a region for extended time horizons. In order to be successful, projects must be linked to and eventually integrated with other policy endeavors at the local, state and federal levels. If these linkages are not anticipated and developed throughout the project, then the time, energy and other resources used by the group will ultimately fail to inform and stimulate the development of other regional policies.

Regional collaborative processes must be linked – directly or indirectly – to other formal planning and policy efforts. Ideally, they should incorporate information from each county's general plan and should, in turn, inform county general plan amendment processes by providing informational tools for planning departments throughout a region. Projects should be linked to the development of municipal and county ordinances, as well as to decisions within the jurisdictions of relevant special districts. These linkages can be forged by engaging local elected officials, planners and local stakeholders in the development of analytical tools and the development and use of information at appropriate scales. Indeed, the group should consider how to integrate their efforts with other appropriate jurisdictional authorities throughout the region. Finally, to close the loop, the sponsoring agency should inform its own policy-making body of the results of the collaborative effort. Regular reports and updates help to demonstrate the potential linkages between locally developed tools and their application, and the formation of policy at a broader scale.

As a concluding note, policy makers and sponsoring agencies should be aware that the development of analytical tools is also, more often than not, the development of human and social capacities. The ability to work

collaboratively, to place trust in others with different or opposing interests, and to share the benefits and burdens of policy outcomes grows slowly over time and with practice. By focusing on information and analytical tools, and by deliberately integrating the development of analytical tools with policy discussions, agencies contribute to the formation of social capital and regional capacities. It is reasonable to assume that higher levels of social capital and regional capacity will contribute to more successful collaborative efforts in the future.

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